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ABSTRACT

Seventy-four papers from a 1986 international conference on improving university teaching are presented. Topics include: student-teacher relationships, the pulse of the academic professional, improving teaching via techology, campus-corporate linkages, institutional changes and liberal learning, improving university teaching through evaluation, quality and access, women in academia, issues in faculty development, innovations in distance learning, improving business education, students and success, innovative classroom methodologies, interdisciplinary studies, issues in student assessment, teacher education, and improving math and science teaching. Additional papers concern: improving university teaching using instructional resources, the computer and language learning, essay examinations in the business curriculum, verbal interaction analysis with university professors, directed self learning in liberal studies for science undergraduates, improving the organization of undergraduate textbooks, college response to an aging society, and a child development curriculum project that interfaces university and the workplace. (SW)

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Improving University Teaching

Twelfth International Conference

July 15-18, 1986
Heidelberg, Germany

Under the auspices of
The University of Maryland
University College
and
The University
of Heidelberg.

II

Contributed Papers

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1300 - 1430

7

IMPROVING UNIVERSITY TEACHING THROUGH THE USE OF INSTRUCTIONAL RESOURCES

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During the last two decades, most colleges and universities have adopted programs that incorporate the use of student evaluations of instructional effectiveness. Many institutions also provide resources for instructional improvement in the form of consultation or training, workshops and seminars, and instructional grants or awards. There is a substantial body of research describing the effects of evaluation feedback on instructional improvement. The conclusions made by reviewers of this literature are somewhat contradictory, however.

A review of the literature by Rotem and Glasman (1979) concluded that "feedback from student ratings...does not seem to be effective for the purpose of improving performance of university teachers" (p. 507). Similarly, Kulik and McKeachie (1975) concluded that the improvement of instruction through written feedback is not supported by the available research. Marsh (1984) concludes that "studies of the usefulness of student ratings are infrequent and often anecdotal" (p.748), despite a substantial number of published reports. More positively, Cohen (1980) reports a modest but significant effect (15 percentile points) of feedback in improving instruction. Furthermore, this effect is strengthened when consultation accompanies feedback. Levinson-Rose and Menges (1981) review also supports the overall effectiveness of instructional intervention studies, although they criticize the methodological quality of many studies.

The present paper reviews several studies of short term interventions and their impact on instructional improvement as measured by student ratings and on changes in the use of instructional resources following intervention. Student ratings were obtained using the

Arizona Course/Instructor Evaluation Questionnaire (CIEQ) which is described by Aleamoni (1979) and Aleamoni and Spencer (1973). The CIEQ is a standardized instrument composed of five relatively independent subscales that measure course and instructor effectiveness.

The purpose of this paper is to suggest that substantive improvements occur as a result of even minor instructional interventions. It is our view that a comprehensive system of institutional rewards and support in the form of instructional resources has a significant and meaningful impact on the quality of university instruction. Three relationships that bear on the improvement of instruction are discussed below. The first of these examines data that suggest a small to moderate improvement in student ratings of instruction following interventions that provide the instructor with student ratings feedback and consultation. The second relationship consists of a parallel but nonsignificant trend in student ratings data following completion of an instructional workshop. Lastly, there appears to be a strong relationship between participation in instructional training activities and increased use of student ratings and other instructional resources. This relationship has not been examined previously in the literature on instructional improvement.

Feedback with Consultation

Two studies using the CIEQ have demonstrated an improvement in ratings as a function of feedback and consultation. In Aleamoni (1978), 33 instructors at the University of Arizona administered the CIEQ during the Fall semester of 1971. CIEQ ratings and normative comparisons were provided to all instructors as feedback. In addition, 20 of the 33 instructors participating in the study also received individual diagnostic consultations. The consultations included interpretation of CIEQ results, problem identification, and discussion of strategies for change. The 13 remaining instructors served as a control group. The CIEQ was again administered at the end of the following semester. This resulted in a two groups (experimental vs. control) by two time periods (pre vs. post) design.

All courses represented in the study were conducted in the College of Agriculture, ranged from freshman to graduate level, and covered a wide range of course material (e.g., agricultural engineering, plant pathology, entomology). The 33 instructors taught a total of 52 courses with a total enrollment of 3,358 students. The instructors held faculty positions ranging from instructor to full professor (mean rank was between assistant and associate professor). Twenty-seven of the instructors held a doctoral degree and the remaining six instructors held a master's degree. The mean number of years since degree completion was ten and ranged from one to 38 years.

The mean student ratings on each of the five subscales of the CIEQ were analyzed using a repeated measures analysis of variance. For two of the subscales (Course Content and Instructor) significant F ratios were obtained for the group by time interaction effects, $F(1,40) = 7.38$, $MSe = 0.0182$, $p < .01$ and $F(1,40) = 7.92$, $MSe = 0.0211$, $p < .008$, respectively. For both subscales there was a significant increase in the pre-post measures for the consultation group but no significant change in the pre-post ratings for the "control" group.

In a related follow-up study, Stevens and Aleamoni (1985) examined ten years of student ratings data for the 33 instructors that participated in the study by Aleamoni (1978). Of the original 33 instructors, 17 were identified who used the CIEQ during the follow-up period. These administrations of the CIEQ represented a total of 7,095 students enrolled in 132 courses. In the follow-up study, instructors were categorized by the type of feedback information they had originally received. Three groups were defined: ratings feedback only (FO), ratings feedback with consultation (FC), and ratings feedback-excluded from consultation (FEC). These last instructors had received ratings results and interpretation in the original study but no additional consultation since their student ratings were already high. These instructors had been excluded from the report of the original study on the rationale that they were not properly part of the "experimental" consultation group.

From the original to the follow-up study, class size, course level and instructor rank all increased. Univariate analyses of variance were computed to test the comparability of the three instructor groups on these variables. The 3 X (2) analyses (groups by time) indicated that no significant differences were present on any of these variables (all Fs < 1.0).

The follow-up interval encompassed 14 semesters. Average ratings were computed for two equal follow-up intervals, each spanning seven semesters. An average of 4.8 years elapsed between the termination of the original study and the first interval and an average of 8.6 years had elapsed since the intervention for the second follow-up interval.

The five subscales of the CIEQ were then analyzed using 3 X (4) mixed design analyses of variance. The design was the three instructor groups crossed with four time intervals (pretest, posttest, first follow-up, second follow-up). None of the main effects tested were significant for any of the subscales. The interaction effect of groups over time was significant, however, for two of the subscales. In the test of the method of instruction subscale, $F(3,39) = 2.98$, $MSe = 0.03$, $p < 0.05$. The group by time interaction was also significant for the instructor subscale, for which $F(3,39) = 3.58$, $MSe = 0.02$, $p < 0.05$. In both cases these interaction effects were characterized by substantially higher student ratings for the FC instructors than for the FEC and FO instructors.

While some methodological difficulties were certainly present in the original study, several alternative explanations are ruled out by the results of the follow-up study. For example, regression artifacts could be hypothesized as an interpretation of the results of Aleamoni (1978). This hypothesis is no longer tenable on examination of the results of the follow-up study since separation of the groups continued over an extended period of time. Stevens and Aleamoni (1985) also represents the first report of a longitudinal study of instructional intervention. Of 71 studies reviewed by Levinson-Rose and Menges (1981), eighty percent encompass an interval of less than one year of study. Forty percent of improvement studies are of a duration of less than one semester. The two studies reported here demonstrate that feedback from student ratings does produce improvement if augmented by consultation. Furthermore, instructors who have received such training can be distinguished from untrained instructors over a substantial time interval.

Workshop Training

In a continuing and unpublished study, we sought to replicate these training effects on improvement in student ratings as a result of a short, intensive workshop experience. This study examined pre-post changes in student ratings following voluntary participation by instructors in a two-hour workshop on the use and interpretation of student rating results. Much of the material covered in the workshop was similar in content to the consultations reported above. All instructors that attended the workshop during the interval from Fall, 1979 to Spring, 1985 were identified. Of these instructors, any instructor that had administered the CIEQ both before and after workshop attendance was included in the study.

This procedure resulted in a sample of 28 instructors. These instructors represented a variety of disciplines and ranged in rank from instructor to full professor. One hundred and eighty-two administrations of the CIEQ by these instructors were identified. Class size ranged from 5 to 45, course level ranged from freshman to graduate. For each instructor, individual course ratings were averaged to form a ratings mean for the interval before the workshop and for the interval following the workshop.

The obtained means on each of the five subscales of the CIEQ were analyzed using repeated measures analyses of variance. Although none of these analyses were significant at .05, there were increases in student ratings from pre to post on all five subscales. This trend was most pronounced for the instructor subscale for which the difference in means was 0.24, a difference of approximately 12 percentage points in the norm distribution of the CIEQ. The obtained statistic for this subscale was $\underline{F}$ (1,13) = 3.92, MSe = 0.1046, $\underline{p} < .07$. Thus, this study replicated the essential findings of the feedback with consultation studies reported above. Although the results were not significant, the power of the study was quite low. This study will be augmented with additional instructors participating in a separate series of workshops. The additional power of this future test is very likely to result in significant findings. More importantly, however, is the conceptual import of the present study. Like much of the improvement literature, the present study demonstrated that minor investments (i.e., two hours of training) in instructional improvement have an impact on the effectiveness of instructors as perceived by their students.

Use of Instructional Resources

This section describes the relationship between instructor training and future use of instructional resources. This relationship was described in part by Stevens and Aleamoni (1985) but has not been otherwise addressed in the literature. At this point, the relationship is best described as correlational. It is quite possible that the effect arises as a function of an unmeasured concomitant variable. For example, increased use of instructional resources may covary with instructional training, but arise as a function of changes in instructor motivation rather than changes in instructional skills. To the extent that increased association with instructional resources results in more effective instructors, this relationship has substantial import for the design and application of instructional training systems.

In the study by Stevens and Aleamoni (1985), voluntary use of the CIEQ and attendance in instructional workshops during the follow-up interval were measured. Of the 20 FC and FEC instructors, only one did not use the CIEQ during the ten year follow-up interval. In contrast, only 50% of the FO instructors used the CIEQ during the follow-up interval. A z-test of proportions indicated that a significantly greater proportion of the FC instructors used the CIEQ in comparison to the FO group instructors ($z = 2.07$, $p < 0.05$). It was also found that the frequency of CIEQ use differed by group over the fourteen semester follow-up period. The mean frequency of use by the three groups was 9.2, 6.5, and 5.4 by the FC, FEC, and FO instructors respectively. A one-way anaysis of variance testing this result was significant, $F(2,25) = 4.24$, $MSe = 4.28$, $p < 0.05$. Post hoc comparison of the three means by Newman-Keuls tests indicated that the frequency of use for the FC instructors was significantly greater ($p < 0.05$) than that for either the FO or FEC instructors.

Additionally, it was found that there was a significant relationship between future use of the CIEQ and pre-post changes in student ratings during the original intervention study. While virtually all instructors receiving some degree of consultation (i.e., FC and FEC) continued to use the CIEQ regardless of their rating results, the feedback only instructors continued to use the CIEQ only if they had experienced a pre-post gain in student ratings. Of the FO instructors, 71% of those who experienced a pre-post decline in student ratings did not use the CIEQ at all during the follow-up interval. This relationship between pre-post change in student ratings and future use of the CIEQ was significant as evaluated by Fisher's exact test, $p = 0.04$.

In this study a significant difference was also found in the use of other resources during the follow-up interval. After the termination of the original intervention study, no FEC instructors and only one FO instructor attended workshops or solicited instructional consultation. In contrast, 60% of the FC instructors used consultation and workshop resources. This difference among groups in the proportion of instructors using resources was also significant, $X^2(2) = 6.80$, $p < 0.05$.

These results were paralleled in the group of instructors who attended workshops in the continuing study. For these instructors, a significant increase in the use of the CIEQ occurred following workshop attendance, $t(13) = -3.11$, $p < 0.005$. It should be noted that for this study, only instructors who had used the CIEQ previous to the workshop were selected. Even among this group, future use of student ratings increased by approximately 50%.

DISCUSSION

The results reported above provide evidence in support of instructional improvement as a function of short term interventions. None of the interventions require more than two hours of instructor training and yet have resulted in consistent increases in student ratings. Furthermore, instructors who participate in training subsequently use the same and additional resources more frequently than instructors who have not received training. We believe that this increased association of the instructor with instructional methods is worthwhile in and of itself. The instructor who is more actively involved in the improvement of teaching is assumed to be a more committed and effective instructor.

The results of these studies also suggest some important considerations in the application of instructional training programs. First, the performance of the FEC instructors suggests that incomplete consultation may be deleterious to the instructor's performance. This same study also demonstrates that feedback alone is insufficient to produce reliable gains, but must be complimented by consultation or other forms of training. The feedback only instructors also demonstrated a marked tendency to avoid future use of an instrument that provided negative feedback in initial use. It is quite possible that consultation, interpretation, and support by an instructional expert is crucial during early administrations of evaluative methods.

The conclusions of the several reviews on instructional improvement vary substantially. It does appear to be clear from published reports, however, that feedback in concert with consultation produces reliable though modest gains in performance as measured by student ratings. Studies on the effectiveness of short term training similar to our workshops are infrequently evaluated and have been concerned primarily with graduate assistants (see Levinson-Rose & Menges, 1981). The results for our incompleted study of workshop effectiveness are quite promising, however. The same increase in use of resources was found and, though nonsignificant, there was a consistent increase in student ratings following workshop attendance.

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THE COMPUTER AND LANGUAGE LEARNING:
A LEARNER'S MODEL EXPERIMENT

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The Computer and Language Learning

The Eindhoven University of Technology offers opportunities to the students for learning and improving their foreign languages; some courses are led by an instructor or teacher, in others the students use the language laboratory and follow courses on tapes. The latter can be done independently of the guided courses and at the student's own pace.

While teaching Spanish, it was noticed that students of Technology form a special learners group because they are taught to approach a "problem" analytically. They learn to solve problems by constructing mathematical models which include variables; for each problem they have to choose the variables that produce optimal results.

Consequently, they approach language learning in the same way: grammatical rules are translated to equations.

For example: if ... = ... then ... or ...
if ... ≠ ... then ... or ...

When we consider the way in which humans process information (not only for languages) it has become natural to talk of three categories or basic types:

1. Encoding (how information is accessed or retrieved into the mind)
2. Representation (how information is retained or stored in the mind)
3. Retrieval (how information is accessed or retrieved from the mind)

In addition, it is also convenient to talk about the type of knowledge people manipulate by categorizing them; according to Anderson (1976) knowledge is either declarative: information about what something is (Grammar or e.g. CALI), or procedural: information about how to do something (e.g. an utterance in L2 or computer programming).

Declarative Knowledge

Let us first talk about the representation of declarative knowledge. When we consider several experiments it is clear that knowledge is not mentally stored as separate isolated fragments of information; it is stored rather like rich interconnections between related concepts. See for example, the experiments by Meyer & Schvaneveldt (1971) on lexical decision making, who found out that there is a representation scheme that emphasizes organization and incorporates interconnections among represented concepts. A popular conception that fits this scheme is the theory that declarative knowledge is represented via a system of networks, made up of nodes, where each node represents a concept. These nodes are interconnected by pathways (Anderson & Bower, Lindsay & Norman, Wickelgren 1976). How is declarative knowledge encoded into these networks and how is it retrieved? A fundamental assumption of the network conception is that retrieval of declarative knowledge involves activating the appropriate nodes. A node must be activated in order to make its concepts available for ongoing processes. Once activated, the information represented by a node is usually available to consciousness and it is possible (for the activation) to infuse the pathways of the network. Now, what is the best way to encode information so that it later will be accessible?

For many years educators, psychologists and "lay people" believed that repetition/rehearsal/drill & practice was the best way. To test this hypothesis, several experiments have been reported to see whether this assumed relationship between the amount of rehearsal and the probability of retention really existed.

Craik & Watkins (1973/1975) found that the amount of time that a word was rehearsed, did not affect the probability that a word was subsequently retrievable.

In another experiment, Craik & Tulving (1975) discovered that different encoding tasks increased the ability of retrieval. These task varied in depth: from asking for the typeface and rhyming of a word to the question whether the concept represented was a member of specified semantic category; the deeper this processing, the better the retrieval. The theoretical explanation of depth of processing is that it infers richer, more elaborate mental representation (Anderson & Reder 1979 et al.), or information stored in "chunks," meaningful units that are easily accessible while deciding upon language problems like tense, person aspect etc. (Chi et al, 1981).

Many activities induce richer mental representations like e.g. generating a logical continuation for a phrase, sentence or brief text, or answering questions during ongoing comprehension or the use of visual imagery (i.e. creating a mental picture of the information). These findings as mentioned above should have direct implications for instruction V.I.Z.: in order to benefit encoding, it is better to provide learning situations that require elaboration. Computers could be ideal for creating such situations: because the computer can be interactive, it can offer the student a range of different encoding tasks with more individual feedback than a classroom teacher can ever do; besides it can present material in secondary or alternate formats. We have seen that encoding information in an auxiliary format encourages learning, because it provides alternate retrieval paths.

It is clear that both the learner's model and the information process theory seem to justify the use of a computer in language instruction. During the practice of teaching Spanish it was found that one of the problems was particularly suitable for experimenting with a computer, namely the use of the past tenses.

If the theories suggested above hold, then choosing one of the past tenses would consist of the following steps.

1. L1-L2 semantic translation
2. mood (indicative - subjunctive etc.)
3. tense (imperfect - preterite etc.)
4. number and person

What we want to find out at this moment is if these steps are actually followed by students, if these steps are complete, in the right order; if one step is particularly weak in the problem-solving sequence; what the effect is of mistakes, what the difference is between good and bad learners, which type of knowledge is more important (procedural or declarative), and if there is any other mechanism that has effect on the learning system.

The outcomes of this experiment, together with findings from other disciplines like second language learning, CAI and Spanish Grammar will be used for the development of an interactive computer programme.

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THE NEED FOR ESSAY EXAMINATION IN THE BUSINESS CURRICULUM

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> If achievement is measured exclusively by objective means, an instructor might inadvertently make the mistake of teaching nothing more than the ability to select a correct answer.[1]

For more than two decades, many American students have been trained in rote learning and memorization. Objective testing, consequently, was one of the few means of determining students' ability, regardless of the questions that were often raised about test validity and reliability. In an era of stiff peer competitiveness, when the bottom line often involves obtaining employment in one's chosen field or competing for places in top-level graduate schools, students cannot afford to have their horizons limited. Expecting

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them to provide "pat" responses to completion sentences, guessing among alternatives in multiple choice and true or false questions can be counterproductive. Such testing methods need to be reevaluated.

Today, many college students want assistance in writing skills which prepare them for the global work environment and achieve higher LSAT and GMAT test scores. "That's what writing has become these days: a skill necessary for acceptance in medical or law schools or in MBA programs."[2] Consequently, although writing ideally should be the primary method of inquiry, students may see it as the carte blanche to educational or business success.

Many educators believe students have lost their identity and right to free expression in the captive environment of objective testing. Can students articulate, conceptualize, and deal with abstract ideas in the university or the world of work? In our highly sophisticated technological society, these talents and qualities are necessary for individual and eventual group survival.

The use of essay questions on examinations can help overcome these insufficiencies. Essays encourage and develop self-expression, have the potential to provide learning experiences in, and of themselves, and allow for the measurement of attitudes, values, and opinions. Additionally, essay examinations provide a criterion for retention as well as a more valid assessment for measuring knowledge.[3] Unfortunately, few students are exposed to this method of questioning in economics, anthropology, history or business courses.

Usually, students at the college level find it difficult to accept and adapt to this form of testing because they received little or no training and preparation in this area during their earlier educational experiences. Moreover, many experience fear, anxiety, and apprehension. Part of these feelings are caused by poor or inadequate study habits and infrequent testing of essay writing skills.

The College of Business Adminstration at St. John's University requires that all instructors who teach undergraduate management, marketing, and finance, prepare essay examinations. Ideally, these exams measure students' knowledge, comprehension, application, and synthesis of the course's subject matter. Unfortunately, many of the students do poorly on these examinations, although some will perform adequately on objective tests covering the same material.

A review of the literature reveals limited information on subjective testing and methodologies, which could be used to reduce student fear or build student confidence in writing essays under test conditions. Several studies, however, on behavior modification and achievement conducted in the 1970s by Harvard psychologist Robert Rosenthal and noted sociologist Robert Merton were applicable to this educator's research. Both men are proponents of the "self-fulfilling prophecy: or "Pygmalion effect," which showed how one person's expectations influences another person's performance. It should be noted that Merton's population was adults in an industrial work setting, and Rosenthal's were children in local grade schools.[4]

Hypothesis

If students are coached, counseled, and encouraged (confidence building), in other words, are taught how to improve study habits, select salient points in reading passages, intelligently answer end-of-chapter questions, they should be better able to organize their thoughts and place them on paper during an essay examination.

Delimitations

The study was conducted at St. John's University, St. Vincent's College, Jamaica, New York, during the Fall, 1985 semester. The study involved two "Principles of Management" classes.

Methodology

I. Population: Each class had 40 students at the upper freshman and sophomore level. A random sample, using a random number list, of 15 students from each class was a suitable number with which to work. The Soloman Four method was used since it controls for pretest bias.

Class A - Met at 8 a.m. Monday, Wednesday, and Friday for 55 minutes each day.

a) Experimental Group - T_1 X T_2

b) Control Group - T_1 T_2

Class B - Met at 8 a.m. Tuesday and Thursday for 85 minutes each day.

a) Experimental Group - X T_2

b) Control Group - T_2

Procedures for Gathering Data

Pretests were given to both groups during the second week of the semester. Questions were based on subject matter covered in previous class sessions. (Exhibit A) The findings recommended the course of remedial action to be pursued.

III. Treatment for Experimental Groups

Since most St. John's students are commuters who hold part- or full-time employment with erratic job schedules, it was difficult to conduct formal workshop sessions. Semi-structured sessions, therefore, were developed around students' available time. Also, some advising was provided at the beginning or end of the particular classroom session.

The treatment consisted of:

- counseling--examining students' strengths and weaknesses in writing ability;
- coaching--emphasis placed on reading comprehension and selection of salient points in the reading, organization of thoughts, and writing sequences from paragraphs or episodes from assigned material;
- no-lose quizzes--a different approach to "quizzes" where students can only "win" (gain points) and are not penalized for incorrect answers. These quizzes are in the essay format. This exercise becomes a confidence builder, designed to reduce fear of answering essays and generates

acceptance of written responses.

This educator's philosophy concurs with that of William Zinsser, who expressed his sentiments in On Writing Well. "I want them (the students) to relize there is no one right way of writing, as long as the English is clean."[5]

IV. Procedures for Analyzing and Interpreting Data

Analysis and interpretation of data must be conducted on an individual basis--looking for individual student progress, if any. Subjective approaches cannot be analyzed in the same manner as objective approaches. This instructor sought the following outcomes:

- expresses ideas clearly; relates ideas to the main thesis;
- uses ideas that are logical;
- develops the essay in an organized manner; writes well-constructed, relevant paragraphs;
- uses parts of speech correctly; uses words effectively to convey meaning;
- makes few spelling errors and minor errors in punctuation.[6]

Use of the Rank-Difference Correlation to compute the correlation coefficient could be an additional analytical tool for this study.

V. Findings, Conclusions

The hypothesis was accepted. A marked improvement was noted in students' attitudes, behavior, writing skills, and major examination grades. Exhibit B shows improvement in student scores.

EXHIBIT A

SAMPLE QUESTIONNAIRE

Since you have just completed your first week of instruction in Management 1001, I would like you to share some of your thoughts with me. Try to be as candid as possible with your answers. Yes or no responses are not appropriate at this time. Record your answers in pen in the attached booklet.

1. Last week you were introduced to some general and basic concepts on the art and science of managing, and the people who collectively make up what is called the "management team." As workers, consumers, and citizens of a free enterprise society, you have developed some views on general business practices, such as ethics, corporate responsibility, and so forth.

   In two paragraphs, express your opinions or beliefs on a particular business practice or issue which concerns you in a positive or negative way.

2. With regard to essay questions, answer the following:

   a) How do you react to essay questions?

   b) Do you feel challenged by essay questions? Threatened?

   c) Do you prefer objective tests over subjective tests? If you would answer yes to this question, give your reason(s).

EXHIBIT B

TEST SCORES

T_1 X T_2

Experimental Group, Class A

ESSAY TESTS

Student	1	2	Final
I	54	57	78
II	74	90	100
III	71	86	96
IV	73	96	100
V	64	68	83
VI	45	80	83
VII	60	81	87
VIII	56	75	80
IX	54	75	86
X	68	80	87
XI	71	63	89
XII	52	72	85
XIII	50	66	78
XIV	56	90	97
XV	38	76	77

X T_2

Experimental Group, Class B

ESSAY TESTS

Student	2	Final
I	72	86
II	46	72
III	78	100
IV	86	89
V	55	73
VI	66	72
VII	66	87
VIII	71	100
IX	70	97
X	69	83
XI	68	93
XII	69	84
XIII	82	96
XIV	55	85
XV	66	85

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VERBAL INTERACTION ANALYSIS WITH UNIVERSITY PROFESSORS

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Among the panoply of studies on the quality of teaching in elementary and secondary schools, the verbal interaction analysis between teacher and students has accounted for a large number of publications in the past forty years (Anderson 1939, Withall 1949, Flanders 1951, Amidon 1959, Flanders 1965, Moskowitz 1966, Frisberg 1976, Silvernail 1979).

A comparable interest and concern in the quality of teaching in colleges and universities as well as research in professor verbal interaction are scarce. Stockdale and Wochok (1977) expressed their point of view on this subject in the following manner: "the majority of Ph.D's... employed by institutions of higher learning only then come to the full realization that they have little or no organized or formal training in the craft of teaching", that "the American college teacher is the only high level professional person who enters his/her career with little or no practice and experience in using the tools of his/her profession", and that "the experience of the majority of the future college teachers as teaching assistants, is the sole opportunity they will have to learn how to teach".

Literature does reveal some studies involving verbal interaction as a means to modify university teaching, namely through the analysis of professor, lecturing, initiated interactions, use of student ideas, questioning and acceptance of student feelings (Sorge (1971), Batchelder and Keane (1977), Hall (1978), Shymansky and Penick (1979)).

METHODOLOGY

The purpose of this study was to investigate whether professors trained in *verbal interaction analysis* would modify their behaviors in the classroom.

Hypothesis

In-service training in verbal interaction analysis has no effect on the verbal behavior of the professors in the experimental group.

Design

The study involved, (1) a 15-hour in-service training program in verbal interaction analysis and (2) the classroom verbal behavior of professors and students as measured by analyses of interactions from actual classroom activities. A pretest-posttest design was chosen to investigate these relationships with an experimental group and a control group; interval testings were conducted in both groups.

Subjects

The forteen university professors who participated in this study averaged 5 years of teaching experience at the university level and had an average class attendance of 22 students. The experimental and control groups were composed of the following professors; three from the Administration department, two from Accounting, one from French and one from Education.

Measuring instrument

The instrument used was an interaction analysis system called INTER-25 and contained the following behaviors and their corresponding code:

Professor behaviors

1. Accepts student feelings.
2. Gives light reinforcements.
2a. Gives sustained reinforcements.
3. Repeats student idea verbatim.
3a. Rephrases and summarizes student ideas.
3b. Expands upon and compares student ideas.
4. Asks narrow-type questions.
4a. Asks broad-type questions.
4b. Answers student questions.
5. Gives information, lectures.
5a. Corrects without rejection.
6. Gives directions.
6a. Suggests student participation.
6b. Directs drills
7. Criticizes student ideas/behaviors.

Student behaviors

8. Responds to narrow-type questions.
8a. Respond to broad-type questions.
8b. Asks questions.
9. Initiates talk.
9a. Converses with fellow students.
9b. Disturbs classroom.

Neutral codes

- Transition
R. Laughter
0 Silence
X Noise

There is no scale implied by these numbers. Each number represents a classification, it designates a particular kind of communication event. To write these numbers down during coding is to classify, not to judge a position on a scale. This system is an adaptation of systems belonging to Flanders, Moskowitz and Lemire, except for categories 4b, 6a, 8, 8a, 8b and 9a which were devised by the author.

Coding

The coder records a number corresponding to one of the categories every three seconds or less, depending upon whether a behavior is continuous on the part of the professor or the student; when an interaction is taking place between the professor and the students or between students and students, each behavior in the interaction is recorded. The sequence of numbers is later cast into a matrix for analysis.

Interaction data

Classroom activities of each professor were audio-taped three times at four-week intervals, for a total of 42 tapings. Each professor recording represented approximately two and a half hours of instruction, for a total of 105 hours under normal classroom conditions. For each two and a half hours of taping, the coding was applied to those segments where predominantly *lecture-discussion activities* took place; the coding of similar segments continued until 25 minutes had been collected; thus 75 minutes of coding were collected for each professor through the three audio-taping sessions. When a behavior went on continuously for two and a half minutes, a transition (-) was recorded to show a break in the coding, hence indicating that the tape was allowed to run until another segment of lecture-discussion resulted, and then coding continued. The tallies were fed into a computer programmed to output a matrix and related data on classroom verbal behaviors.

The in-service training program

Following his studies in the training of teachers through in-service programs in verbal interaction analysis, Flanders (1960) claimed that teachers who were qualified in some content area should be exposed to some type of human relations training that would help them (1) use the social skills of accepting, classifying and using the ideas of students, (2) know those acts of influence that restrict student reactions and those that expand student reactions.

In the light of these studies, an in-service training program was designed to help university professors modify their classroom verbal behaviors.

In a series of 15 one-hour individual sessions, the professors in the experimental group were trained as follows:

1º Discussions of the results of a 34-item student perception questionnaire on professor classroom verbal behavior; this questionnaire was administered prior to taping #1.

2º Introduction to the training program in verbal interaction analysis; definitions, objectives, techniques of coding, indirect behavior categories, direct behavior categories, student behavior categories, analysis of data and interpretation of results.

3º Analysis, discussion and evaluation of classroom verbal activities following the audition of taping #1.

4º Analysis and interpretation of a general profile of the professor's classroom verbal behaviors based on the matrix and data from taping #1.

5º Analysis and interpretation of a detailed profile of the professor's classroom verbal behaviors based on the matrix and data from taping #1. This was done in reference to the results of the students perception questionnaire and led to the acceptance that some verbal behavior changes were possible.

6° Analysis, discussion and evaluation of classroom verbal activities following the audition of taping #2.

7° Same as #4 but with the matrix and data from taping #2.

8° Same as #5 but with the detailed profile from taping #2. Prior to discussions on further attempts to change behaviors, feedback was provided by each professor on the estimated success in their first efforts to modify behaviors. Further discussions and suggestions followed on ways and means to consolidate those changes.

9° Prior to taping #3, each professor reviewed with the trainer, his/her progress and consequent success in modifying classroom verbal behavior and its influence on student verbal participation.

10° Throughout the in-service training program period, extra informal information and help were constantly offered and given to the experimental group professors. The nature of this help centered around methods of teaching, classroom organization conducive to student verbal participation, audio-visual aids in teaching, as well as mimeographed notes on such teaching skills as: ability to perceive student attitudes, the art of questioning, professor reinforcement of student-talk and the ability to vary teaching stimuli.

RESULTS OF THE STUDY

The interaction analysis system was used to collect classroom data, the Mann-Whitney-Wilcoxon Test was run on the experimental & control group following taping #1 and taping #3, and the Wilcoxon Matched-Pairs-Signed Ranks Test was applied to compare taping #1 and taping #3.

The results of the tests revealed that from the outset, the two groups were presumed to have been selected from the same population. Between taping #1 and taping #3, there were significant modifications in the experimental group professors in their (1) total indirect influence (p. =.02), (2) total direct influence (p. =.05) and I/D ratio (p. =.02) as compared to the control group which showed no significant differences. Furthemore, taping #3 revealed that there existed a significant difference between the two groups in their total indirect influence (p. =.002) and their I/D ratio (p. =.002).

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DIRECTED SELF LEARNING IN LIBERAL STUDIES FOR SCIENCE UNDERGRADUATES

AN EXPERIMENT IN THE MANAGEMENT OF LEARNING

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Background

In 1982 the author agreed to run a liberal studies course on the Modular Sciences Degree Course at Coventry (Lanchester) Polytechnic (UK). Teaching on the course involved contact with two different groups of students on two different days, because of timetabling difficulties. The response in these circumstances is often for the member of staff concerned to give the same lecture on two occasions, often during the same week.

As an alternative, the author decided to try to design a course which eliminated lectures, and which put the onus for their own learning on the students, whilst maintaining academic standards.

The course, as it operated in 1985-86 now comprises the following elements, each of which will be dealt with in turn:

- detailed course programme
- introduction and study skills exercises
- course text
- selected further readings from associated texts
- clippings file, added to and updated by staff and students
- videotape extracts from Open University and other material
- Periodic student-led seminars
- coursework
- final examination by pre-distributed paper
- student feedback on the course by interim and final questionnaire

Detailed Course Programme

Since the students will be largely on their own during the course, then it is vital to provide a clear overall structure or framework. The course leaflet is designed to enable students who wish to do so, to study entirely independently, without attending any of the plenary or seminar events on the course. It presents a complete guide to the set books, with the programme of various video extracts used, the readings which need to be covered and the dates of these and of the associated seminars. Objectives for the course are also provided. Some students do use the Course Programme to enable them to work entirely independently, borrowing the readings from Short Loan and the videotapes from the Media Librarian or his staff.

Introduction and Study Skills Exercises

First, the students are given the lecturer's name and his room number. In exchange, they give the lecturer their names, their course, and the name of their personal tutor. On a course on which staff and students may not meet face to face for some weeks, it is vital that they have a direct route to contact one another at short notice if necessary.

Next, the course programme is looked at in detail, section by section. Students are told where they can obtain copies of the set book, and its cost. The details of using the Short Loan Collection in the library are covered, and the clippings file produced for inspection. A copy of the final exam paper for a previous year in produced for inspection, and its nature and form emphasised. Dates are put to each weekly event on the programme.

Then follows an overview of the course, using extracts from some of the videotapes to sketch in the main structure, and to whet the appetite of the students for what is to come. This is the nearest that any session on the course comes to a lecture.

At the meeting in the second week, most time is devoted to study skills exercises to prepare students for the unusual requirements of the course.

For instance, an essay-marking task is given to students, in which they are asked to mark two contrasting essays on the same subject, making helpful suggestions to the author as to how they might improve. Students then discuss their findings with a partner, and then in groups of four try to arrive at some consensus about the qualities and shortcomings of the essays. Then, in plenary, each group reports back on one of its main findings about the essays, until a list of the qualities of a well-written essay emerges. After many of these exercises, it seems true to say that many classes of students produce criteria for the excellent essay which compare well with those produced by departmental staff.

Using similar student-centred exercises, consideration is also given to developing student awareness about the processes of the seminar, and about learning from video and film.

Course Text

The course text is obviously an even more important component of this than on more conventional courses. The work itself is not long, or particularly difficult, and as a first task, the students are asked to read this all the way through. Since the course takes its name from the text, there is an obvious requirements for the students to become very familiar with the work, and in subsequent weeks, they are directed by the course programme to read chapters relevant to particular section of the course.

Selected Further Readings

These are selected to develop or question the assumptions and approach taken in the course text. An important element of the course is to critically evaluate the ideas put forward by the authors of the text, and these readings are selected with this in mind.

The short loan collection of the library in which these readings are kept restricts loans of the material to a matter of a few hours only, (mornings, afternoon, evening). Alternatively, students can consult these works as they would reference materials without taking them out of the library at all.

Clippings File

Over the years, this has become one of the most borrowed items on the Short Loan Collection. Students seem to be stimulated by it, consisting as it does, of relevant clippings from current journals such as New Scientist and Nature, and articles from the "quality" press. Students are encouraged to add to this as a supplement to those contributed by the author. Also on the clippings file is a copy of an examination paper from a previous year.

Videotape Extracts

With the enthusiastic support of the Media Librarian, the author has been able to provide a great deal of material on videotape relevant to the main themes of the course. Recordings of programmes of the Open University, and Channel 4 under licence, and of those for the BBC and ITV by purchase, are made available in a lecture room at designated dates and times during the course to enable those students who wish to do so to see the material at regular times. The media unit in the library provides video replay facilities for those who wish to view the material independently, or in small groups.

Student-Led Seminars

The class is divided into groups of about 8 - 10 students for seminars on five occasions during the course. Each seminar is centred on a question which is printed in the course leaflet, and which is designed to summarise, or set the scene for a particular aspect of the course. Each group elects its own chairperson and secretary at the beginning of each seminar session. The guidelines for effective discharge of these responsibilities were laid down in the introductory sessions at the beginning of the course. When the groups reconvene in plenary at the end of the seminar discussion, each secretary makes a brief summary report of the group's deliberations, which is recorded on the board.

Coursework

The questions which form the basis of the seminar discussions also become the subjects for the four short essays which comprise the coursework. Each essay is about 500 words, and is a summary of each student's position, having heard the views of the class and having read and watched the appropriate material. The coursework is an important part of the course because it often raises issues connected with presenting material in an academic, or in some cases, a business, commercial or industrial setting. Because the essays are short, some selection of argument is required. Arguments without support become assertions, so that the necessity and conventions for presenting supporting evidence feature strongly.

Final Examination

Rather than set a conventional examination paper, the author looked for a mode which approximates more to the world outside academia. The outcome is a written two hour examination, from a list of questions which the students receive three to four weeks before the examination. This gives them the time to prepare their answers through reading, discussion and planning before the examination date. The expectation of the examiners is that, given this pre-preparation, the papers will be written to a higher standard than those written on an unseen basis. This method gives the students the chance to pursue a particular aspect of the course in some depth after the regular "classes" are over. It also gives the examiner greater scope in the range and relevance of his questions.

Student Feedback

Over the three years in which the course has operated in this mode, the following results have been obtained to these questions.

	1			2			3			4			5		
	Agree Strongly			Agree			Neither Agree nor Disagree			Disagree			Disagree Strongly		
	82 %	83 %	84 %	82 %	83 %	84 %	82 %	83 %	84 %	82 %	83 %	84 %	82 %	83 %	84 %
1. I feel that the course is well organised	3	0	2	30	48	50	47	35	23	17	17	17	3	0	0
2. The seminar discussions are useful	3	4	18	39	45	35	19	24	30	25	23	7	11	4	4
3. The readings on short loan are easy to use	3	10	4	25	37	26	42	32	40	28	17	21	0	3	2
4. Student participation is encouraged	25	7	18	56	70	61	17	21	7	3	4	5	0	0	0
5. I find that the style of the course is appropriate	6	3	9	25	39	37	28	32	30	30	23	14	8	3	2
6. There is too much video tape	3	3	18	11	8	5	25	17	19	42	52	42	19	20	7
7. I would prefer to have lectures	28	10	11	25	17	12	17	13	19	14	32	25	17	30	26
8. I find the course enjoyable	3	1	11	17	46	44	56	42	30	22	4	5	3	1	4
9. I find the course difficult	0	1	2	8	8	16	47	32	12	42	48	54	6	7	9
10. There is not enough time to do all the work	28	7	19	42	33	12	17	21	19	11	31	33	3	7	7

TOTAL NUMBERS OF STUDENTS ON THE COURSE EACH YEAR	1982	1983	1984
	36	71	86

GREAT IDEAS IN BUSINESS:
A PROPOSAL

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Introduction

This paper proposes to apply an old concept to a new area. The old concept is the notion of 'great' ideas. That is, succinctly targeted ideas which, by some set of criteria, merit the accolade of 'great.' This concept has been used for many years in academia, particularly in the liberal arts, to focus attention on studies and to facilitate discussion.

The new area is business or commerce -- those activities and institutions devoted to producing the economic goods and services needed and desired by society.

Now, there may be some cynics who may argue that business is, inherently, devoid of great ideas, holding that it is a bad idea to begin with. But, I take as a premise, that any society must provide some measure of goods and services - food, shelter and clothing to name a few - and, therefore, must conduct business. In this very general sense, it seems to me, societies should have addressed some issues, learned some ways of accomplishing the task, and discovered some useful and communicable knowledge significant enough to be described as great.

Having established the goal of identifying great ideas in business, possible criteria for evaluating candidate ideas will be discussed followed by some suggested candidates. The paper will conclude with a discussion of the benefits of this approach.

Criteria for a Great Idea

What shall be the test or tests of a great idea? When the people at Britannica developed their list of great ideas they had a specific goal in mind. They had chosen a collection of great books and they wished to distill the contents of those works to a manageable list of ideas. This goal suggested several criteria: (a) the idea had to be profound, (b) it had to be enduring, and (c) it had to be contained in one or more of the collected works. Britannica ended up with a list of 103 ideas, are shown in the Appendix.

For the project I am proposing, there is no defined collection of books which bound the search for great ideas. No doubt, such a collection could be identified, perhaps containing Adam Smith's *Wealth of Nations*, Frederick Taylor's *The Principle's of Scientific Management* and Chester Barnard's *The Effective Executive*, but business does not have the rich literature of the arts and sciences. Much that is important in business is divulged through journals, magazines, government publications, newspapers, radio and television. Thus, limiting great ideas in business to some set of books would be overly confining.

While the goal(s) of a list of great ideas in business may be different, the criteria used by Britannica can provide a starting point. Certainly, profoundness should be one criterion. To be called 'great' an idea must have been important to the evolution of business as we know it today. Without such a test, even though judgment is involved, the list of ideas might be endless.

A second criterion I would suggest is currency. That is, knowledge of a great idea must be important to the conduct of business now, not just in the past. This might stem from current applications of the idea or from its importance toward having a proper historical perspective. This is an adaptation of Britannica's second criterion - that an idea be enduring.

The final criterion I would suggest is that the idea be predominantly associated with business. Again, this is to delimit the possible list. Ideas such as science, physics, mathematics, and government - which appear on the Britannica list - have been and still are important in business. But they have a broad importance to all of society and are not predominantly associated with the institution of business.

In sum, then, I propose three criteria for great ideas in business: (1) have been important to the evolution of business,
(2) contribute importantly to the successful conduct of business today, and
(3) be predominantly associated with business.

Candidate Great Ideas in Business

If I were to make up a list of great ideas in business, several would come quickly to mind: profit, incorporation, and patent and copyright, for example. Let me take a moment to briefly discuss each of these and weigh them against the criteria for a great idea.

Profit is a simple concept the difference between revenue and expense. And, it is an old concept arising out of commerce and accounting which can be traced back to early Egyptian times. But - has it been important to the conduct of business? It is hard to imagine conducting any business without computing profit periodically. It is a primary measure of economic value to society. Any firm which does not achieve a profit is deemed unnecessary. Even Communist countries such as Yugoslavia, Russia and China have discovered its value as a measure of performance. Thus, it seems reasonable to conclude that profit has been and is now important to business. And, judging by the deficits the U.S.A. has been running for so many years now, the notion of profit must be predominantly associated with business.

Having passed all the tests for a great idea, is there anything to discuss beyond defining profit? I think there is. It seems to be a frequently misunderstood concept. It is often cited as a goal of business. Certainly, that must be a goal of any firm which hopes to remain in business for any length of time. But, it is not society's goal for business. Society's goal for business is to produce the goods and services needed and desired.

This difference in goals can cause conflict between business and the society at large. Business measures profit in terms of the economic value in exchange. Thus, air is free because of its unlimited supply while gold is expensive due to limited supply. Yet, society judges benefits in terms of value in use. Where this difference becomes important, governments step in to regulate trade for the good or service. An example would be medical care.

Let us move on to the second idea - incorporation. This idea, generally traced back to the East India Company, separates one's personal wealth from that of a business. In this way, businesses are encouraged to take greater risks than could be taken by an individual. This stimulates research and experimentation with products and services as well as methods and procedures for conducting business.

My third candidate, patent and copyright, is also designed to stimulate new products and services. Here, an inventor is granted a time-limited monopoly in return for the new idea. It is a special stimulus for progress. Both of these ideas, incorporation and patent and copyright, have been important in the development of business, are still important, and are primarily associated with business.

Uses for Great Ideas

What can one do with a list of great ideas in business? Here, I would suggest three applications. First, it could provide an educational foundation for business education in these very dynamic times. A great deal of faculty time an energy is being spent on such things as 'computerising' the curriculum or 'internationalising' the curriculum. In the past, the curriculum was 'quantified' or 'behavioralised' or 'institutionalised.' There seems always to be some current overriding deficiency which must be made up if our students are to receive a 'modern' business education.

While I have no quarrel with these efforts - indeed educational institutions are terribly slow to change - could it be that, in our drive to modernize, we sometimes lose sight of those ideas which have long standing permanence? A list of great ideas in business could provide a sound basis for any general educational program in business.

A second use for such a list would be to evaluate current and proposed curricula. Are the ideas incorporated adequately within one or more course? Do all graduates possess knowledge and comprehension of them? Can they apply these ideas to evaluate alternative courses of action?

Finally, a third use might be to improve the status of business as an institution. We seem to have a love/hate relationship with business. We love the products and services businesses produce, the jobs they provide, the taxes they pay but we hate their profits, hate their impact on the environment, hate their rules and regulations on the job. A list of great ideas in business could help us to better understand the nature of business activities and institutions, as well as the purpose and role of business in society.

Conclusion

In the highly competitive world economy of today, business executives must employ the very latest state of the art techniques if they are to be effective in leading their organisations. By identifying great ideas in business, a firm foundation can be established upon which to judge the merit and contribution of new ideas.

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APPENDIX BRITANNICA LIST OF GREAT IDEAS

Angel
Animal
Aristocracy
Art
Astronomy
Beauty
Being
Cause
Chance
Change
Citizen
Constitution
Courage
Custom and Convention
Definition
Democracy
Desire
Dialectic
Duty
Education
Element
Emotion
Eternity
Evolution
Experience
Family
Fate
Form
God
Good and Evil
Government
Habit
Happiness
History
Honor
Hypothesis
Idea
Immortality
Induction
Infinity
Judgment
Justice
Knowledge
Labor
Language
Law
Liberty
Life and Death
Logic
Love
Man
Mathematics
Matter
Mechanics
Medicine
Memory and Imagination
Metaphysics
Mind
Monarchy
Nature
Necessity and Contingency
Oligarchy
One and Many
Opinion
Opposition
Philosophy
Physics
Pleasure and Pain
Poetry
Principle
Progress
Prophecy
Prudence
Punishment
Quality
Quantity
Reasoning
Relation
Religion
Revolution
Rhetoric
Same and Other
Science
Sense
Sign and Symbol
Sin
Slavery
Soul
Space
State
Temperance
Theology
Time
Truth
Tyranny
Universal and Particular
Virtue and Vice
War and Peace
Wealth
Will
Wisdom
World

CANDIDATE GREAT IDEAS IN BUSINESS

Accounting
Administration
Advertising
Balance of trade
Banking
Barter
Borrowing
Budget
Bureaucracy
Business
Buying and selling
Capital
Capitalism
Centralisation
Child labor
Contract
Credit
Demand and supply
Division of Labor
Economics
Entrepreneur
Export and import
Factory system
Finance
Free enterprise
Free trade
Incorporation
Interchangeable Parts
Investment
Leadership
Loan
Management
Manufacturing
Marginal
Marketing
Money
Monopoly
Motivation
Organisation
Ownership
Patent and copyright
Power
Price
Private property
Productivity
Profit
Property
Quality
Regulation
Rent
Research
Revenue
Risk
Savings
System
Trade
Union
Value
Wages
Wealth

IMPROVING THE ORGANIZATION OF UNDERGRADUATE TEXTBOOKS

James O. Maloney
The University of Kansas

* * * * *

"NOT TO KNOW THE RELATIVE DISPOSITION OF THINGS IS THE STATE OF SLAVES OR OF CHILDREN"
John Henry Newman

* * * * *

BACKGROUND

I have been intimately involved in teaching chemical engineering subjects at the University of Kansas for the last forty years. I have had an opportunity through three Fulbright grants to observe the teaching of these subjects in other countries. During a sabbatical leave I studied the methods employed at the Economic Development Institute (an educational branch of the World Bank) in teaching project evaluation. I have taught graduate courses concerned with the relationship between technology and society, and have participated with professors of history in the teaching of a course in the history of technology. I have also served over the years as a discussion leader for a course in Western Civilization which is required of all students in our College of Liberal Arts and Sciences. Finally I have acted as assistant editor of the major English language handbook on chemical engineering (1). From all of these activities I have observed many of the ways that authors have organized textbook materials, and I have reflected upon the difficulties that students have in mastering subject matter. From time to time I have indulged myself in the luxury of attending classes at the University and as a result I have developed, or redeveloped, a student's attitude on the frustrations of learning. Such is the background that serves as a basis for the remarks which follow.

ORGANIZATIONAL INADEQUACIES

Over the years I have become increasingly aware of the failure of typical textbooks to establish in the minds of students a clear concept of the structure of the material that they present. Most texts give adequate attention to details, but offer few overall views.

I observe the deficiency most clearly whenever I ask the students in a class to prepare a summary of a chapter that has just been discussed and worked over. The class members are asked to develop the summary in the form of an organizational diagram. They are informed that an outline of the chapter will not do; what is wanted is some sort of diagram which makes clear the central idea that is dominating the material; which shows the relations of the various sections of the chapter to that central idea; and which indicates how the examples given and the problems solved contribute to the distinct comprehension of the central idea. They find the assignment difficult, and in their presentations a number of different opinions arise as to the identity of the central idea, and of the kind of relations the central idea bears to the sections of the chapter.

There are several possible explanations for their difficulties. One obstacle is the inherent nature of a book, which is composed in essentially a linear or filament form; in it one word follows another, one sentence another, one paragraph another, one chapter another. This form makes it difficult for an author to clarify interrelations among the parts of his material other than those he has chosen to follow in the statement of his thought. He may, to be sure, break up his work into chapters and subchapters; he may also provide introductions, crossreferences, flashbacks, and summaries. Nevertheless, the basic difficulty will remain: a multi-dimensional subject is very difficult to present and comprehend clearly in the linear form of treatment.

There are several other possible explanations. The material in many texts is often presented as the logical derivative from a few stated principles. While this method of presentation exhibits both the importance of the principles and the power of the logical process, as they apply to a portion of the subject, too often the author states no reason for beginning a derivation. The student is asked to follow a line of reasoning with no notion of its goal or the significance of it. Lack of comprehension may result from other causes. A textbook seldom indicates the methods by which the material was actually developed; it rarely sketches the eras when the developments were achieved, though each was influenced, if not controlled, by the particular circumstances of its time. In sum, the student is frequently left without any motive for pursuing the derivations, and without any comprehension of the historical development of the subject. In a way he lacks, through no fault of his own, an understanding of the genesis, of the evolution and of the morphology of a subject.

And finally, some of the authors of our texts are far from clear in their own minds as to what structure they desired to give to their material. Some authors seem to have great difficulty recognizing the difference between coordinate and subordinate ideas. This difficulty can often be detected by reading the chapter titles.

All of these conditions act to frustrate a student's endeavor to develop a meaningful structure for his knowledge.

Students who have carried out several of these organizational assignments frequently develop considerable skill and are willing to rearrange materials in a way that makes logical sense. The students can then take on the task of organizing an entire text. What these students are learning to do is to develop a sort of intellectual map of an area of their knowledge.

EARLY INVENTIONS FOR STRUCTURING INFORMATION

A brief treatment of some inventions for structuring information may be appropriate at this point. In classical times of course all writing was done by hand and much of both Greek and Latin was written in "upper case" letters with no separation between words, with essentially no punctuation, and with no variation in letter size in a given document. Word separation, punctuation and paragraphs are significant structuring developments. Another technique for structuring subject matter involves telling the reader the divisions of a subject and then taking up the divisions one by one. This technique can be seen in the writings of Hugh of St. Victor in the late 12th century and of Aquinas in the middle of the 13th century. These writers would also insert recall phrases to help the reader.

The invention of printing provided other structural options. Main divisions of works could be set off into chapters, and type variation—both size and font--could be used to show subdivisions and emphasis. Different colored inks could also be used to indicate importance. By the middle of the 16th century two and three dimensional drawings were used to show geographical features and to show how machines were built and how they operated.

SOME EXAMPLES OF STRUCTURING

The several structuring processes about to be described would be much better understood if example materials could be displayed in this paper. Space limitations allow only two examples. At the presentation, example materials will be available for inspection. In a way each of these examples are creating a map of knowledge.

The Outline Form: An outstanding example of the outline form is contained in the Propaedia Volume of the Encyclopaedia Britannica.(2) Here many topics of knowledge ranging from the most abstract to the most practical are organized in this form, and great care has been used in matters of coordination and subordination. The outline form, however, does not seem too well suited for showing relations between major topics.

The Flow Diagram: The flow diagram may be used to show how various relations are developed from prior ones, e.g. material flow through a chemical process (a spatial relationship), historical development of a mathematical subject (a temporal relationship) or a managerial organization (a hierarchical relationship). Molleck (3) has used such diagrams and employs black and red lines to show how thermodynamic relations are developed. He places these "overviews", as he calls them, at the conclusion of the treatment of a topic.

Consequently, they are more summary oriented; but they can be very helpful in fixing in the reader's mind where he has been.

The Two Dimensional Chart: Lipson (4) has developed a two-dimensional chart which shows an organization of his view of the five great issues of politics. The material is ordered chronologically and by the opposing views on each issue. The chart appears at the end of his text as a fold-out. A copy of this chart is shown as Figure 1. A student who studies the chart carefully would have an excellent overall view of the issues, and an acquaintance with the position that major writers have taken on an issue.

The Repetitively Developed Sketch: Januszczak (5) shows how artists go about producing a painting. In each case it seems the painting begins with a sketch containing the basic layout of the painting. It is then elaborated over and over in greater and greater detail until the work is finished.

The Atlas: A most extensive multi-dimensional treatment is in a book by Ivo Kolin (6) titled Thermodynamic Atlas. This book contains a number of plates which show the essential features of thermodynamic devices and their operation. A typical plate will contain an overall view of the device, detailed diagrams of the working parts, an abstraction of the system and the calculations of importance. Portions of one plate are shown in Figure 2. No description can do justice to his work. One needs to see an entire plate to understand his vision.

THE UTILITY OF STRUCTURING KNOWLEDGE

The primary utility of such maps is that they provide the student with a sense of understanding of the "relative disposition" of subject matter. Once he obtains a clear view of the overall structure of a subject, the addition and retention of detail become much easier.

Another benefit of such maps is that they may be developed in different ways. For example, the equivalent of an historical atlas can be constructed to show the chronological development of a subject. Another map might show the major important writings associated with the various parts of the subject.

Since the maps may be prepared to any desired level of detail, they can be used to give successively more and more detailed instruction on a subject without losing sight of the basic organization.

Certain benefits can also come to those who prepare the maps in that they may discover relations that have been previously hidden from them. Writers may also discover that they have over-emphasized a particular topic because of their familiarity with it. In some cases the preparation of a map concerned with naturally occurring substances may lead to significant discoveries. The perodic table is an example of how classification directed further study and led to prediction of the properties of, as yet, undiscovered elements.

SOME SPECIFIC ORGANIZATIONAL SUGGESTIONS

Maps: Consideration might be given to developing an overall map of the text and additional detailed maps for each chapter. The latter maps would, of course, be closely related to the overall map. In preparing the overall map it might be designed to show how the particular subject is related to other larger areas of knowledge. The maps would be most useful if they were in a fold-out form.

Length of text: The three-credit course is the usual unit in American universities operating on the semester system. Authors trying to appeal to a variety of teachers tend to produce texts which connot be covered in a semester and, as a consequence, cost the student more than is warranted. The book might well be designed as a single entity which is to be totally finished in a semester. If reasons exist to include more material, the inclusions should be limited to enlargements of material already covered.

Prerequisites: The text could well state explicitly what specific skills the student should have as he begins the course. For example, a coverall statement such as "the normal course in __________" is not helpful. It would be better to give specific examples of what the student needs know. Also helpful would be reference to several widely used texts containing the prerequisite material together with the pages given where the specific information can be found.

Use of Text: The author could well include specific recommendations, which he has tested thoroughly, for covering the text. These could include day-to-day lecture coverage, problem assignments and stopping places for short quizes and hour examinations. Sample examination questions would also be helpful. No one knows the text better than a competent author. His recommendations can be invaluable to the instructor.

Memorization: Items to be memorized, including the vocabulary, might be set out at the beginning of a chapter and emphasized by a special arrangement in the text. A glossary of terms at the end of the text would be helpful.

Important Principles or Equations: These items could also be set out in some special way - using type and/or colors.

Problems: If problems constitute a part of the text, each problem might have a title.

Introductions and Summaries: An introduction and summary might be provided for each chapter. Some books also provide an outline of each chapter at the front of the chapter.

Title and Table of Contents: The title of the text should give a clear indication of its contents. For example a title which begins "Principles of __________" promises that the book will contain principles. Since the table of contents should build on the title, for the above title, the table of contents would contain among its major chapter headings ones which begin with the words "The Principle of __________".

References: References to additional materials might be augmented by a short summary of what they contain and why a student might want to read them. References to entire books are probably not helpful, but references to specific sections might be.

Type Size and Font: The judicious use of type size and font can also help give organization to material, but the significance of particular size and font needs to be explained to the student.

CONCLUSIONS

The thesis of this paper was that textbooks for undergraduates can be improved by paying careful attention to organizational matters. Good organization helps the student to structure his knowledge and to understand where additional information fits. Some general and specific organizing techniques were presented.

Instructors who consider good organization as an important criterion in selecting textbooks will be helping to improve student comprehension and retention of subject matter.

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Figure 1

FROM: The Great Issues of Politics

SURVEY-CHART OF THE GREAT ISSUES OF POLITICS

Leslie Lipson

PERIOD	FIRST ISSUE		SECOND ISSUE		THIRD ISSUE		FOURTH ISSUE		FIFTH ISSUE	
	Privilege	Equality	Monism	Pluralism	Authoritarian Government	Controllable Government	Concentration of Power	Dispersion of Powers	Smaller States	Larger States
From 10th century, B.C. To 4th century, B.C.	Greek Monarchies and Oligarchies Doctrine of Inequality in Plato and Aristotle		Greek Polis Philosophies of Plato and Aristotle		Greek Monarchies, Tyrannies, Oligarchies Sparta: Plato's Republic	Athenian Democracy	Persian Monarchy Greek Tyrannies Constitution of Athens		Greek Polis Theories of Plato and Aristotle	Delian League Imperialism of Sparta, Athens
From 3rd century, B.C. To 4th century, A.D.	Slavery in Graeco-Roman World	Stoicism Policies in Roman World: Equality with Provincials Roman Extends Citizenship Gospel of Jesus	Roman Republic Roman Empire until Conversion of Constantine		Roman Caesarism, the Emperorship The Byzantine Empire	Constitution of the Roman Republic	Roman Monarchy Roman Emperorship	Roman Republic, Checks and Balances	Roman City-State Collapse of Roman Empire in the West	Macedonian Empire Roman Empire, Its Greatness
From 5th century, A.D. To 15th century	Serfdom, Feudalism Medieval Gradations of Rank Hereditary Nobility	Career Opportunities in the Church	Papal Bull, Unam Sanctam	Pope Gelasius I, "The Two Swords" State-Church Dualism Corporations, Guilds, Universities	Feudalism Church Government Power of the Nobility	Anglo-Saxon Assemblies Magna Carta English Parliament		Feudal Decentralization Localism Powers of the Nobility	Germanic Kingdoms	Charlemagne, Holy Roman Empire Christian Universalism, Islam: Crusades
From 16th century To 17th century	Landowners' Rule Religious Intolerance	Puritans, Levellers Doctrine of Natural Rights Reasserted Locke	Erastianism Theory of Sovereignty Bodin, Hobbes Mercantilist Economics: Tariffs, Regulation of Commerce and Manufacturing		Absolute Monarchy: Spain, France, Austria, Russia, Prussia England: Charles I, Cromwell Divine Right of Kings	Conciliar Movement vs. Roman Papacy Calvin, Quakers, English Civil War Supremacy of English Parliament, Locke	Absolute Monarchy Theory of Sovereignty Bodin, Bacon, Hobbes English Parliament	Coke Independence of English Judges	Protestant Reformation The Nation State, Its Sovereignty Thirty Years War Wars of Louis XIV	Sea-Power, Age of Discoveries Grotius: Growth of International Law Colonies
18th century	Burke, Hamilton, John Adams	Rousseau Jefferson, Paine U.S.A.: Declaration of Independence, Bill of Rights French Declaration of Rights		French Physiocrats, Laissez Faire Adam Smith, Wealth of Nations Individualistic Theories	Bonapartism	Rousseau Constitution of the United States Principles of French Revolution	Rousseau Unitary States: Britain, France	Montesquieu U.S.A.: Federal Union, Separation of Powers	Seven Years War Independence of U.S.A. Nationalism	Kant Imperialism Napoleonic Empire
From 19th century To 20th century	Hegel Carlyle Nietzsche Industrial Plutocracy: Great Inequalities of Wealth and Income Master-Race Doctrines One-party Systems: Fascism, Nazism, Stalinism Communist Governments	Bentham Liberalism Extension of Suffrage Abolition of Slavery Freedom of Religion Mass Education Women's Emancipation Welfare State Marxist Theory	State-Controlled Church, Theocracy State Intervention in Economics: Public Ownership, Regulation, Social Services Socialism Communism, Fascism	Manchester School of Economic Thought British Free Trade J. S. Mill, On Liberty Spencer Unregulated Capitalism Anarchism Catholic Social Theory Guild Socialism	Hegel, Metternich Marx One-Party Dictatorships: Fascism, Communism	Reforms of British Parliament Institutions of Representative Democracy Free Elections Free Expression of Opinion Two- or Multi-Party Systems	Cabinet Government Unitarianism Centralization: Conditional Grants in Aid One-Party Dictatorships Imperialism	Presidential System Bicameralism Local Autonomy Federal Unions: Switzerland, Canada, Australia British Commonwealth of Nations	Independence of Latin America Weakening of Turkish, Austrian Empires World War I National Self-Determination Economic Nationalism World War II Anti-Colonialism	Unification of Italy, Germany International Arbitrations Hague Conferences League of Nations, I.L.O., World Court World Economic Depression Air Age, Atomic Power United Nations NATO, Regional Organizations

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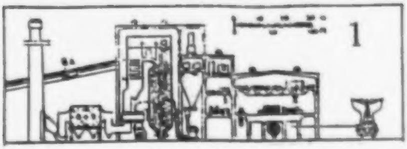
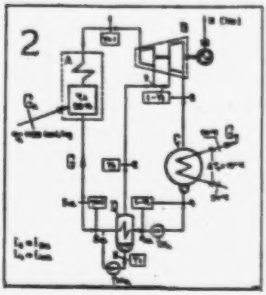


OVERALL VIEW



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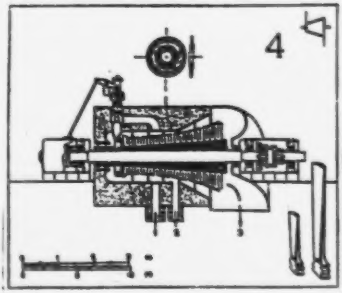

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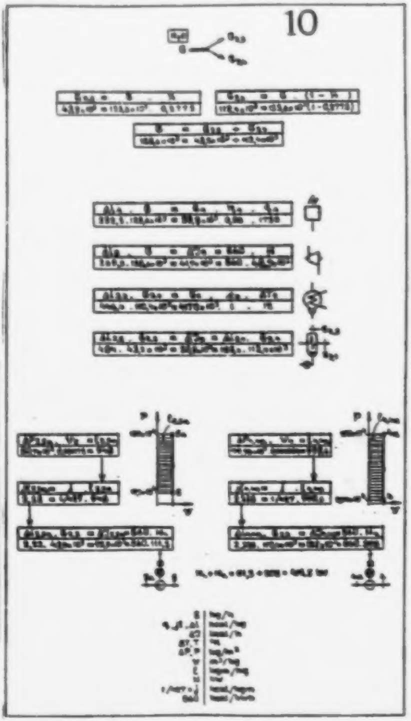

MATERIAL AND ENERGY BALANCES

Figure 2: PORTIONS OF A COAL-FIRED THERMOELECTRIC STEAM POWER PLANT
FROM: THERMODYNAMIC ATLAS VOL 1. IVO KOLIN

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A COLLEGE'S RESPONSE TO THE CHALLENGES OF AN AGING SOCIETY

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College of St. Scholastica

The population of the United States and of most other industrialized societies has been aging, and a substantial intensification of this trend is projected over the next half century. Already, nearly one of every six persons in the United States is over the age of sixty. It is projected that the elderly population in the U.S. will increase to 22 percent by the year 2000 and to 25 percent by the year 2025.

These demographic trends are already quite pronounced in northeastern Minnesota, where 18.4 percent of the current population is over the age of sixty. In view of these demographics, the College of St. Scholastica, in collaboration with both private and public agencies, has developed and implemented a variety of aging-related educational programs and services to meet the new needs of the regional community. This paper describes various components of the aging education continuum, in terms of their objectives, the content, the target audience, and the mode of delivery.

In addition to describing the new learning opportunities that have been made available to our students, to the service providers, and to older people and their families, we will also indicate how the development of these programs and services has promoted collaboration among faculty from several departments within the college as well as between the college faculty and staff members from various agencies in the region. We will also describe how the program has provided new challenges and opportunities to the faculty and has contributed to their vitality. The aging education continuum consists of three major functions: education and training, service, and research. These functions are illustrated as a continuum because they represent interrelated, sometimes overlapping functions, rather than discrete categories. This paper provides a description of the programs conducted under the first two of these functions. Information on our research activities can be obtained by writing to the author.

EDUCATION AND TRAINING

During the past six years we have developed three types of activities to meet the needs of those who are either currently working with older people or plan to do so in the near future: (a) the certificate program in gerontology for interested undergraduate students from programs such as Nursing, Physical Therapy, Social Work, and Psychology; (b) the graduate program in psychology of aging to prepare practitioners with competencies in various areas of gerontology; (c) workshops for staff members from social service agencies, hospitals, and nursing homes.

The Certificate Program. Developed with a grant from the Administration on Aging, this 28-quarter credits undergraduate program provides students with the attitudes, knowledge base, and skills needed to work effectively with older adults. In addition to the 20 course credits, students do an internship in an applied setting that provides them with first hand experience of working with older adults in their area of interest. Courses from a variety of disciplines are offered in this program. These disciplines include psychology, sociology, education, biology, nursing, and management. In order to make the program accessible to those who have other responsibilities during the day, all courses are offered in the evenings. Partnership arrangements have been developed with a number of agencies such as County social services, hospitals, and nursing homes. Under this arrangement half of the participants' tuition is paid by the employer and the remaining half by the college or an external funding agency.

In view of the college's mission to serve the needs of the entire geographic region, the program has also been offered in two rural communities, one about 65 miles and the other 120 miles from Duluth. In order to reduce the time needed to travel to these distant communities, self instructional materials have also been prepared for three of the courses. This has enabled us to reduce the number of times the faculty members have to travel to these communities to meet with the "students" enrolled in these courses.

The Graduate Program in Psychology of Aging. The goal of this 54-quarter credit M.A. program is to prepare professionals who can provide a variety of services in the field of aging. Depending on their area of specialization and interest, the program graduates will be able to design and implement psychosocial interventions matched to the individual characteristics and needs of aging adults, provide counseling and other services to the elderly, conduct applied research, plan and monitor new programs, work with and educate families and service providers, and provide consultation and services to business, industry, and other organizations. With a three-year grant from The Bush Foundation, we are currently developing two specialized tracks in (a) mental health and counseling and (b) adult learning and employment. The Bush grant also provides financial assistance to students in the form of need-based aid, research/service assistantships, and travel support to students from distant communities. Assistantships provide the graduate students with valuable opportunities to work with faculty members on research or service projects both in Duluth and outlying communities. Examples of these project include designing and conducting memory workshops for older adults, organizing and facilitating support groups for informal caregivers of older adults, collecting norm data for tests originally designed for other populations, and assessing the training needs of service providers.

In the past three years we have also instituted a distinguished psychologists program. Under the auspices of this program, we invite two distinguished psychologists from other universities, research organizations, and services agencies to spend 2-3 weeks on our campus. During their stay with us the visitors offer a couse or seminar in their area of interest for 2-3 hours a day. This is attended by 10-12 students from our graduate program. The visitors also provide consultation to faculty members, students, and to staff members from health and social service agencies. In addition, the visitors also travel to a community about 65 miles north of here where they address the members of Elder Services Network, a small group of health and social service practitioners from rural communities. This program, currently funded by a 2-year grant from the Mardag Foundation, enables us to offer new electives to our students, allows our faculty members to seek visitors' advice on projects of common interest, and provides us with an opportunity to share this resource with practitioners from Duluth and from neighboring communities.

Workshops and Lectures. In addition to participating in the two educational programs described above, the faculty members also conduct workshops for service providers from health and social service agencies in various parts of this region. This enables us to meet the current educational needs of those who work directly with older people on a regular basis. By participating in this activity, we are also able to maintain contact with the service providers located in different communities. Indeed in many cases participation in these workshops has stimulated the interest of service providers in furthering their education and has led to their enrollment in the appropriate undergraduate or graduate programs at the college. Topics of workshops we have conducted in the past three years include: Sensory deprivation, families and aging, sexuality and aging, physical changes and health issues, importance of personel relationships, myths and realities of aging, dementia, and purposeful living for elderly.

Most of these workshops have been offered in the participants' place of work. Funded jointly by the college and the host agencies, these workshops enable the participants to remain abreast of new developments in their area of interest, provide them an opportunity to discuss relevant issues with their colleagues, and make it possible for them to earn continuing education credits necessary for maintaining their professional license. In view of the dramatic demographic shifts and rapid generation of new knowledge about various aspects of aging, workshops and lectures aimed at professionals, paraprofessionals and the lay public will continue to be needed. By providing this service on an ongoing basis, we hope to make a positive impact on the quality of life of older people by reducing the gap between the generation of new knowledge and its utilization by practitioners, especially those who work in rural areas.

SERVICE PROGRAMS

In this section we will describe the programs that we conduct to meet the needs of older adults and their families. These programs include:

- The Education and Support Program for Caregivers
- The Wellness Centers for Older Adults
- The Elderhostel Program
- The Emeritus College Program

Though these programs differ in terms of their content and mode of delivery, they share the common objective of enhancing the quality of life of older people. Brief descriptions of each of these programs follow.

Education and Support for Caregivers. Although a large number of caregivers have the motivation and willingness to provide care and support to their elderly family members, most of them do not have enough knowledge and understanding of the aging process. We have, therefore, developed this program to provide education and support for spouses, adult children, friends, neighbors, and others who provide care to older adults at home.

The program for caregivers is offered in the form of seven sessions which meet once a week for three hours. Facilitated by guest speakers from the college as well as from service agencies, these sessions cover topics such as Psychological Aspects of Aging, Biologic Aspects of Aging, Behavioral Problems Associated with Aging, Communicating with Older Adults, The Importance of Interpersonal Relationships in the Process of Aging, and Stress Management for the Caregivers. Upon the completion of the educational series, the participants are encouraged to continue meeting in small groups to discuss topics of common interest and to provide support to one another on an ongoing basis. This program has been offered at 7 rural sites during the past 4 years. Four graduate students and five faculty members have been involved in performing various tasks related to this program. An instructional manual has been developed and disseminated on a nationwide basis to enable others to implement similar programs in their communities. Financial support for this program has been received from federal, county, and private agencies.

Wellness Centers. The purpose of wellness centers is to provide health education to seniors with the focus on prevention. Developed with a grant from The Blandin Foundation, these centers enable older adults (60 years and older) to actively participate in their own wellness programs. Topics covered in this educational program include normal aging process, nutrition, exercise/fitness, stress management, and community resources. The program utilizes a variety of teaching methods such as lectures, audio-visual presentations, written materials, physical assessments, and health histories. This series has been offered at several locations in Duluth and in Grand Rapids. In addition, the program coordinator has presented mini-health education lectures and demonstrations at other senior centers, clubs, and organizations upon their request.

Elderhostel Program. In view of our interest in meeting the needs of the older population and the underutilization of human resources and facilities during the summer months, it was natural for us to participate in this program. Inspired by the youth hostels and folk schools of Europe, Elderhostel combines the best tradition of education and hosteling. The program begins on Sunday evening and ends the following Saturday morning. Participants take as many as three courses during this week. These courses, taught by the college faculty and staff, do not presuppose previous knowledge of the subject matter and do not involve tests, homework or grades. The subject matter is restricted to liberal arts and sciences, and as a matter of policy courses avoid the issues of aging and retirement. The thirty to forty hostelers live in the college dormitories and eat in the cafeteria with traditional students. In addition to the courses, they also participate in extra curricular activities which provide plenty of opportunities for social interactions. This combination of education, travel, and adventure attracts older citizens to our campus from different parts of the country.

In addition to the faculty, students from both the undergraduate and the graduate program in psychology of aging contribute to this program in a variety of ways. Faculty and students teach courses, facilitate extra curricular activities, and serve as tour guides. Thus the program enriches the lives of the participants as well as those of faculty, staff, and students.

Emeritus College. While the Elderhostel is a summer program for elderly persons from other parts of the country, the Emeritus College program is offered in Duluth and in neighboring communities throughout the year. Supported by a grant from the Minnesota Humanities Commission, this program offers six-week courses in humanities to older learners. Classes are held in senior citizen centers, public libraries, nursing homes, and other locations that are easily accessible to older adults. Courses we have offered in the past three years include History of Psychology, Learning and Memory, Computer Literacy, The Soviet Union, China, Shakespeare, Music Appreciation, and Journal Writing. Program evaluation indicates that these seminars provide much-needed intellectual stimulation, information on current topics, and social contact with fellow students from varied backgrounds for older learners. The fact that the participants pay only a nominal fee of $5.00 and the classes meet in central locations during the year makes the program easily accessible to elderly persons.

CONCLUDING REMARKS

These activities have provided excellent development opportunities to the faculty members. This has included performing tasks such as designing and implementing new curriculum, getting the programs approved by accrediting agencies, writing grant proposals to seek external funding, marketing the program to attract the target populations, working with faculty members from other disciplines, and developing working relationships with staff from nursing homes, hospitals, area and state agencies on aging, and funding agencies. In order to prepare themselves for new responsibilities, four of the faculty members have been provided released time and travel support to attend relevant seminars, courses, and workshops offered by gerontologists from established programs in other parts of the country. Thus the program has introduced variety in the professional routine of the faculty members and has provided them with new activities that permit continuing growth and prevent academic stagnation.

INTERFACING UNIVERSITY AND WORKPLACE:
A CHILD DEVELOPMENT CURRICULUM PROJECT

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The issue of quality child care is becoming more and evident due to the growing interest in day care facilities and need for programs for young children. Topics such as child abuse, missing and exploited children, and single parent families are emerging concerns. There is current emphasis on children and on programs that provide quality care for young children. Several corporations are developing programs to accommodate the children of their employees. It is a need in many United States communities because of the dual career families and single parent families with young children. U.S. Bureau of Labor statistics indicate that over 50% of the working women have children under six years of age.

Universities can work with other agencies to provide services. One example is in curriculum development. Carefully designed curriculum materials that are competency based might be useful in training employees already in industry and in training prospective employees seeking jobs. This task was undertaken at Murray State University, Murray

Kentucky, through the assistance of a 1984-85 grant from the Kentucky State Department of Vocational Education, where a curriculum was developed. It contains two hundred tasks or competencies relating to child development and care and is currently being field tested during the 1985-86 school year in vocational schools and secondary schools in Kentucky where persons are being trained to seek employment in child centered agencies and programs. The curriculum contains ninety seven modules or lessons, each with information and instruction sheets, learning activities and evaluation plans. A wide range of topics has been grouped into sixteen categories or blocks. These curriculum blocks have been designed to be used independently or in a sequential order.

In order for employees to function effectively they need adequate training for their jobs. There is a definite need to present the body or knowledge in an organized and understandable manner. By developing and providing training materials, the regional university can be effecting in helpingto interface with various agencies and assist them in gaining quality employee training materials or in providing training materials to institutions who prepare employees.

A knowledge of basic theories relating to child development and care and application of these theories is essential for those who work with children. Those using this curriculum are encouraged to learn theories and basic principles and apply them in a variety of situations. They are challenged to evaluate existing programs in light of current information and trends in quality child care. Characteristics and advantages and disadvantages of various types of programs can help workers plan more effectively. They can learn techniques for coping with the challenges of the information explosion and to make wise decisions in situations involving young children. The growth process for children can be difficult but is eased by positive attitudes of trained professionals. The issues of child abuse, child neglect and missing children are of great concern. Techniques for coping with these and other special needs children are examined. Specific curriculum plans for areas of art, music, math, science, and literature are addressed. Play, which is the work of the child, is related to real situations and used as an aid in teaching concepts and in helping children develop. Learners can also gain skills necessary for succeeding in the world of work.

The advisory committee which was utilized to provide input and evaluate the curriculum development during various stages, was composed of directors of public and private day care centers, kindergarten and pre-school teachers, instructors of government head start programs, and university personnel. They met at intervals to aid in revising and evaluating the educational materials.

Limited evaluation is available to date. However comments from teachers using the curriculum during the fall of 1985 have been positive. Comments from students have included those indicating positive attitude changes about their jobs, an increased self-esteem because of their competence and self assurance and a willingness to accept responsibility and to follow through with a program. Comments from employers at agencies cooperating in the work experience program and also those hiring trained personnel have been favorable. Additional follow-up studies will be conducted after the curriculum has been used and more evaluative instruments and feedback are available.

It is hoped that additional projects which link educational institutions with other agencies can be undertaken in the future. This project might serve as a pilot for other state or countries wishing to undertake a similar curriculum assignment.

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STUDENTS TEACHING THE COMPUTER:
A METHOD FOR LEARNING

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Since the 1960's, computer-assisted instruction (CAI) has been used in the teaching of mathematics. During this period, attempts to assess the value of such teaching methods have yielded mixed results. While Buckley and Bauch (1979) and Casner (1977) concluded that CAI improved achievement in the learning of mathematical skills and concepts, studies by Vincent (1977), Cranford (1976) and Johnson (1974) found CAI ineffective.

The impetus of this paper was a study (Sasser, 1984), conducted by the author, designed to test the possibility that some CAI failures are due to a lack of congruence between the methodology of the program and the learning styles of students. One of the important findings of the afore-mentioned study, i.e., the effectiveness of the "programming method" in CAI, is the subject of the writer's proposal for improving university teaching, specifically, the calculus which is normally taught during the first two years of study.

Discription of Study — Upon Which This Proposal is Based

Sasser (1984) investigated the relationships between methods of computer-assisted instruction in mathematics and the learning modality preferences of students. Three instructional methods — visual tutorial, visual-auditory tutorial, and programming problem-solving — were compared for effectiveness in improving algebra skills and attitudes towards mathematics.

Procedures. The sample consisted of 79 seventh-graders enrolled in a Department of Defense School. Each student was randomly assigned to one of the three methods. A modality preference test was used to determine subjects' preferred learning channels; visual, auditory, or non-preferenced. The principal dependent variables were gains on algebra, WRAT, and attitude measures. Using ANOVA, the gain score distributions were analyzed.

Findings. Hypothesis 1, no significant differences among methods was rejected (p.05), with the programming group achieving significantly higher gain scores than the visual tutorial group. Hypothesis 2, which stated that there would be no significant differences in algebra gain scores among the groups, was supported by ANOVA findings. Hypothesis 3, that there were no significant interactions among treatments and preferences, was rejected. ANOVA indicated a significant interaction between non-preferenced, visual preferenced and the programming treatment. Hypotheses 4, which posited that there were no significant differences between male and female students, was accepted. Attitudes across all groups showed even gains.

In Sasser's (1984) study, the programming method was assumed to be non-preferenced between the visual and auditory modalities. Because of its use of student action rather than passive reception of information, Sasser treated the programming method as an action-oriented, or kinesthetic, approach to learning, even though there was no firm basis for asserting this.

ANOVA on the gain scores indicated a significant interaction between preference and treatment (F=2.753, p=0.021). The matrix of mean scores for the subgroups shows the nature of this interaction.

In the visual treatment group, the visually preferenced subjects showed the greatest gain. In the auditory treatment group, the subjects with auditory preference showed the greatest gain. And in the programming group, the non-preferenced subjects showed the greatest gain. But both visual and non-preferenced subjects demonstrated the greatest gain from the programming treatment.

The programming method of CAI in mathematics was found to be more effective over the entire sample than the tutorial method in improving algebra scores. In general this lends support to those who have always argued that students learn better through activity than passivity. More concretely, the finding suggests that the teaching of programming skills thus can be an effective way of helping students master basic mathematical skills and concepts.

Since the extent to which the results of Sasser's (1984) experiment can be generalized from the specific sample of seventh graders learning algebra to university undergraduates learning calculus is severly limited, the writer proposes additional research in which the investigators test the value of teaching the mathematical concepts and manipulations of the calculus using programming techniques.

Programming Method

The programming model requires students to write computer programs which solve a class of mathematical problems. The theory is that the writing of such programs teaches the learner a deeper understanding of the concepts involved. Billings (1983) suggests that when students write, test, and refine a computer program, they extend and apply concepts in new ways. The process of programming a mathematical task gives a student a new understanding of the meaning and method involved. In this mode the student develops instructions which will activate the computer to perform a set of tasks as commanded. A variety of tools and techniques is developed in programming as students create instructions or commands, which are spoken, written, shown by pictures or diagrams, and/or coded and run on the computer.

It is this latter strategy of CAI (coded and run on the computer) which extends most the knowledge and mastery of mathematics by students. When students write, test, and refine a computer program they extend and apply concepts. The development of concepts is at the very heart of learning mathematics, and the computer is ideally suited to provide practice and training in the techniques toward learning such concepts.

The programming format is particularly suited for instruction in the universities' calculus courses for two reasons:

(i) "The widespread availability of microcomputers has made it possible for people learning calculus or using it in their professional work to graph functions in the plane or in space, to solve many equations quickly, and otherwise to implement the formulas derived by calculus." (Thomas & Finney, 1984, page vii)

(ii) The modern textbooks which universities have adoped for the calculus series contain many exercises which are specifically suited for the programming format. For example, see exercise number 15, page 165 of Thomas and Finney (1984).

In the following examples, selected to illustrate how the programming format can be used, BASIC has been chosen as the programming language because it is a very popular programming language that makes it relatively easy for time-sharing users and microcomputer owners to interact with their machines.

Example 1

Find the value of $y = x/(\sqrt{x+16} - 4)$, when $x = .000001$.

This example is given first so that the student is immediately alerted to the limitation of computers caused by the manner in which they store and process numbers. The example leads naturally to mathematical processes for getting around these limitations.

The following program will give the value $y=15.7903209$, which is incorrect. (The Apple II-Europlus was used in programming these examples. Another computer might solve the program since it may be accurate for a greater number of digits. In which case just use a smaller value for x).

```
]LIST

10  PRINT "THIS PROGRAM WAS WRITT
     EN BY JOHN E. SASSER, PH.D."

15  PRINT " "
20  PRINT "EXAMPLE #1"
30  LET X = .000001
40  LET Y = X / ( SQR (X + 16) -
     4)
50  PRINT Y
60  END

]RUN
THIS PROGRAM WAS WRITTEN BY JOHN E. SASSER, PH.D.

EXAMPLE #1
15.7903209
```

But if we first rationalize the denominator:

$$y = x/(\sqrt{x+16} - 4) = \sqrt{x+16} + 4$$

Then the following program gives the correct answer:

```
10  PRINT "THIS PROGRAM WAS WRITT
     EN BY JOHN E. SASSER, PH.D."

15  PRINT " "
20  PRINT "EXAMPLE #1A"
30  LET X = .000001
40  LET Y =  SQR (X + 16) + 4
50  PRINT Y
60  END

]RUN
THIS PROGRAM WAS WRITTEN BY JOHN E. SASSER, PH.D.

EXAMPLE #1A
8.00000007
```

Rarely do students understand the concept of limits when first presented in the traditional manner. The speed and accuracy of the computer makes it particularly useful in exploring this concept.

<u>Example 2</u>

(a) Write a program to make a guess about the limit of the sequence $f(n) = \sqrt[n]{n}$ (for n=1,2,3,...).

```
LIST

10  PRINT "THIS PROGRAM WAS WRITT
     EN BY JOHN E. SASSER, PH.D."

20  PRINT " "
30  PRINT "EXAMPLE 2"
40  INPUT N
50  LET F = N ^ (1 / N)
60  PRINT N,F
70  GOTO 40
80  END
```

```
RUN
THIS PROGRAM WAS WRITTEN BY JOHN E. SASSER, PH.D.

EXAMPLE 2
?1
1               1
?2
2               1.41421356
?10
10              1.25892541
?100
100             1.04712855
?1000
1000            1.00693167
?1000000
1000000         1.00001382
?1000000000
1E+09           1.00000002
?1000000000000
1E+12           1
```

A similiar program can be written to find values of p for which

$\lim_{n\to\infty} \frac{1}{n^p}$ will converge.

In the final example, a program has been written to find the area bounded by the X-axis and the graph of a polynomial function.

These three examples plus others such as the Newton-Ralphson Method/Picard Method; writing a program to find the derivative of a function; sketch a curve; finding maxima & minima; verifying the validity of the Fundamental Theorem of Integral Calculus, are just a few of the many ways in which the programming format in CAI can be used for instruction in the first course in calculus.

Example 3

```
]LIST

.   HOME
20  DIM A(101)
30  PRINT "NUMERICAL INTEGRATION
     USING THE TRAPEZOIDAL RULE"
40  PRINT "ENTER THE FORMULA TO B
     E INTEGRATED IN LINE 150"
50  INPUT "ENTER THE LOWER LIMIT"
     ;L
60  INPUT "ENTER THE UPPER LIMIT"
     ;U
70  INPUT "ENTER THE NUMBER OF CA
     LCULATION INCREMENTS";N
80 AREA = 0
90 DX = (U - L) / N
100 X = L
110  FOR I = 1 TO N + 1
120  REM
130  REM  REPLACE THE NEXT LINE W
     ITH THE FORMULA TO BE INTEGR
     ATED
140  REM
150 A(I) = X * X
160 X = X + DX
170  NEXT I
180  FOR I = 1 TO N
190 AREA = AREA + DX * (A(I) + A(
     I + 1)) / 2
200  NEXT I
210  PRINT "THE AREA UNDER THE CU
     RVE FROM ";L;" TO ";U
220  PRINT " IS ";AREA
230  PRINT "DO YOU WISH TO CHANGE
      THE INPUT PARAMETERS(Y/N)"
240  INPUT A$
250  IF A$ = "Y" THEN 50
260  IF A$ = "N" THEN  END
270  GOTO 210

]
```

```
RUN
NUMERICAL INTEGRATION USING THE TRAPEZOIDAL RULE
ENTER THE FORMULA TO BE INTEGRATED IN LINE 150
ENTER THE LOWER LIMIT
?REENTER
ENTER THE LOWER LIMIT0
ENTER THE UPPER LIMIT3
ENTER THE NUMBER OF CALCU  TION INCREMENTS20
THE AREA UNDER THE CURVE   OM 0 TO 3
 IS 9.01125001✓
DO YOU WISH TO CHANGE THE INPUT PARAMETERS(Y/N)
?Y
ENTER THE LOWER LIMIT1
ENTER THE UPPER LIMIT3
ENTER THE NUMBER OF CALCULATION INCREMENTS30
THE AREA UNDER THE CURVE FROM 1 TO 3
 IS 8.66814816✓
DO YOU WISH TO CHANGE THE INPUT PARAMETERS(Y/N)
?N
```

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Mean Algebra Gain Scores by Treatment
and Preference

Treatment	Pref: Visual	Auditory	Non
Visual	2.91	1.82	1.60
Auditory	2.40	4.63	2.88
Programming	5.40	1.57	5.89

CONTINUING EDUCATION AND THE UNIVERSITY'S RESPONSE TO CHANGING POPULATIONS: THE IMPACT ON SCHEDULING

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As colleges and universities prepare for shrinking enrollments of traditional full-time students, they should examine the potential of using scheduling as a marketing tool. While traditional residential students generally register for late morning and early afternoon courses, nontraditional, part-time students have different needs that require different scheduling arrangements. The scheduling of classes is therefore crucial to attracting and retaining the reservoir of students needed to maintain academic and financial integrity. Institutions of higher education cannot afford to neglect the schedule as a marketing tool.

A properly assembled schedule can attract greater numbers of students than one randomly designed or based on the needs and interests of faculty. It is the department chair's responsibility to build a schedule that maximizes enrollment levels within each course and maintains academic integrity. Scheduling design should benefit the university's main service group-students.

What Students Desire

The length of time courses meet and frequency of meeting times can affect enrollment. For example:

Moraine Valley Community College surveyed registering students on a variety of topics. Student groups preferred that three credit-hour courses be offered twice weekly; the second preference of full-time students was three times and for part-time students once weekly. Students frequently requested more classes in the evening and more sections for popular courses.[1]

South Oklahoma City Junior College conducted a needs assessment survey of the community surrounding its Open Access Satellite Education Services Center to determine levels of interest in educational activities. Art and music, business, leisure activities, and self-improvement were the most popular topics. Tuesday and Wednesday were the most popular days, while early afternoon and early evening seemed to be the most popular times.

Santa Ana College conducted a survey to determine the needs and interests of residents in the service area. Over half of the respondents were interested in taking classes in fine arts, business, and English, and preferred classes that met once a week for three hours on weekdays and were scheduled in the mornings or evenings.[3]

Moraine Valley Community College found that revising schedules to include more classes that meet only once or twice weekly is one way to reduce attrition and attract more students. The majority of students preferred two ninety-minute class sessions per week and a many students preferred one three-hour session.[4]

Tidewater Community College in Virginia administered student questionnaires that revealed that although most students were willing to compromise their personal/work schedules in order to take as many courses as possible, they preferred to make only one trip per day to school. In particular, female and black students were severely restricted by problems they encountered with transportation.[5]

Scheduling Strategies

Institutions should schedule courses and programs according to the types and numbers of students the courses or programs need to attract. For example, institutions usually offer courses and programs in the summer to serve students currently enrolled or about to enroll. The institution could design the same summer program to attract high school students who wish to take some courses prior to enrolling at another institution, or to permit students currently enrolled at other colleges and universities to carry courses while at home during their summer vacation. Institutions can significantly increase enrollment by focusing on target groups of potential students and launching adequate promotional efforts.

Planning schedules long in advance (allowing for some subsequent modifications) can greatly enhance the advising process and aid retention. By knowing what courses will be offered, students and advisors can design balanced schedules and avoid the "hit and miss" problems created by short-term scheduling. Institutions should accurately construct the annual schedule up to four years in advance-if possible-with only minor variations occuring from term to term.

Some specific strategies for using scheduling to attract greater enrollments include: expanding the length of the academic day, week, and year; altering the timing patterns, sequencing, and distribution of courses offered; and offering courses at a variety of locations to let more students attend.

Expanding The Academic Week

Colleges and universities must begin to look at increasing the length of the academic week and at utilizing their facilities on a year-round basis. The more usable hours there are in the academic week and calendar, the more effective is the system of scheduling.

James F. Blakesley writes:

> The length of the academic week and variations in time patterns used in developing a schedule play vital roles in the effectiveness of the academic schedule. The academic week may be considered the boundary condition limiting the daily starting and ending times for normal instruction. It may include the noon hour or exclude Saturdays. For some campuses it includes the evening hours. For others those hours are considered separately from the academic week-for adult education classes. In other words, the academic week is the framwork of days and hours within which a set of classes may be offered.

San Diego Mesa College developed Mesa's Afternoon Curriculum (MAC) to solve the problem of under-utilization of the plant during afternoon hours. MAC was divided into five six week sessions beginning in September and ending in May. A three-week lecture course ran four afternoons a week, Monday through Thursday, for two hours each day. Classes were scheduled from 1 to 3 and 3 to 5 p.m. when instructional facilities were idle. Students enrolled in the afternoon program could earn six units in six weeks, and thirty units in the five sessions.

The MAC program enabled students to carry a full load of classes by enrolling in two courses at a time and attending classes in consecutive or alternate six-week modules. Mesa designed course offerings to meet the general education requirements as well as the elective course needs of students. The benefits of this system were many. It attracted new students, increased facility utilization, increased retention ratios, provided a full program of course offerings for students unable to attend college during morning or evening hours, and provided teaching opportunities for potentially underemployed full-time staff.

Weekends have gained popularity as a time for colleges to offer programs to attract students who could potentially increase their credit-hour production. Weekend colleges are becoming commonplace as an educational alternative for the working adult.

East Texas State identified a marketing opportunity in the scheduling of its MBA program course offerings. It increased student enrollment by offering MBA program courses on Friday evenings and Saturdays. It continued its regularly scheduled classes on Monday through Thursday evenings, but adopted a modified summer trimester.

Mundelein College in Chicago has designed weekend courses to meet the needs of older women and housewives. Augsburg College holds classes on alternative weekends, permitting a student to elect from one to four courses in a term. Each course meets for 3 1/2 hours on either Friday evening, Saturday afternoon, or Sunday afternoon. Upsala College offers a program for adults with courses scheduled for 8 a.m. to noon, and 1 to 5 p.m. on ten Saturdays in a semester.

Evening packages are another alternative to serve a more diverse student population. The Lawrence Institute of Technology in Southfield, Michigan, offers an evening bachelors program with classes scheduled on Monday, Wednesday, and Friday evenings, and an associate degree program that meets on Tuesday and Thursday nights. Illinois Benedectine College has an evening degree studies program to permit students to complete degree requirements in business, accounting, computer science, and nursing. The courses meet one, two, or three evenings per week, for a total of 3 1/2 hours. Students must complete work toward the degree within seven years after entering the program. The college recommends that students complete a minimum of nine semester hours each academic year including day, evening, and summer sessions.

Time Patterns

Time patterns are the configurations of hours used in designing the master schedule of classes. Some options for configurations of hours are as follows: 1) Schedule all multiple lecture and laboratory sections so that student course enrollments will be distributed equally between mornings and afternoons and between the MWF and TThS sequences each term; and 2) Schedule four-hour multi-sections lecture courses with large enrollments that meet four days a week over the five following combinations: MTWTh, MTWF, MTThF, MWThF, TWThF.

Schedules could be coordinated with the pattern of total courses so that students could take all their courses on two or three days. Two sets would effectively utilize the space each week.[12]

Location of Classes

In addition to timing, accessible locations can enhance scheduling service. Indiana University-Purdue University at Indianapolis (IUPUI) offers courses at five different shopping malls located throughout metropolitan Indianapolis. The program, "Learn & Shop," is offered during the day and evening, Monday through Friday. The majority of the offerings are lower division general education courses. IUPUI also has a weekend college and schedules courses from Friday evening at 6 p.m. through late Sunday afternoon, ending at 5 p.m. The university offers approximately 1,000 courses in forty different subject areas through the Learn & Shop program.

In Indiana, the private and public colleges and universities offer courses to other campuses, medical centers, hospitals, businesses, industrial firms, military bases, and so on, through the Indiana Higher Education Television System. For example, Ball State University offers an MBA program beamed to locations throughout the state; Purdue University transmits engineering courses into various industrial plants; and Indiana University uses the system to deliver nursing courses into selected hospitals. Many of these courses and programs are designed for the nontraditional student who cannot get to the main campuses at the times the courses are offered. Some of the courses are broadcast to other colleges to enrich their curricula. This system has unlimited potential as faculty use it more as an instructional tool.[13]

Summary

Scheduling within the context of planning can be a very effective instrument in attracting and retaining a greater number of students into a college or university program. Unfortunately, many institutions have not perceived scheduling as a marketing tool. It is time that faculty and administrators utilize more creative scheduling solutions in order to expand enrollments and to include more nontraditional and part-time students, especially in light of today's tight budgetary restrictions. Institutions must take bold, but workable steps in order to use their limited funds to serve greater numbers of students.

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STEREOTYPING IN COLLEGE TEXTBOOKS:
A CONTINUING CONCERN

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Background of the Study

The present study is an out-growth of an earlier one by Weaver (1985) which looked at the textbooks currently used by young children and the ability demonstrated by pre-service teachers to help children to compensate for misleading text passages. An analysis of those findings led the three researchers in the present study to pose the questions: Do the textbooks used currently in teacher education programs include misleading and biased material? To what extent, if any, do such materials help to perpetuate stereotyping with regard to gender, race, ethnicity and age? Do the textbooks used in teacher education programs published since 1980 show greater sensitivity to stereotyping than those published prior to 1980?

Numerous studies conducted during the decade concluding in 1980 indicated a pronounced need for teacher educators to work to eliminate various kinds of stereotyping. Myra Sadker pointed out in 1980 the importance of teacher educators in eliminating sex bias in the schools (Sadker, 1980). Her research with widely-used teacher education texts led her to conclude that such books are characterized by omission and imbalance. (Sadker and Sadker, 1980). Research by Gollnick and others found that there is a dearth of materials on sex equity readily available for use by teacher educators in both undergraduate and graduate programs, with the greatest need for materials at the pre-service level. In addition, they reported a survey of members of the American

Association of Colleges for Teacher Education which indicated that few courses focusing on women are offered as a part of the professional preparation of teacher education students. (Gollnick, 1979).

The findings of Burdin were of a similar nature. His research led him to recommend that sex-fair instructional materials be created for courses in educational foundations, educational psychology and methods courses. (Burdin, 1981). Although they did not look specifically at teacher education texts, both Wilson (1980) and Lenarcis (1977) found that U. S. history textbooks are seriously lacking in depicting the true role of native Americans and other minority groups in the nation's history.

By the turn of the twenty-first century, one in every five citizens in the U. S. and Britain will be 65 years of age or older, leading the researchers in the present study to ask whether currently - used teacher education texts take into account the existence and role of senior citizens in society. A study by Jantz and others (1977) found that young children have alarmingly stereotyped views of older people characterized by considerable negativism. Jantz concluded that teachers have a responsibility to develop in the young positive attitudes toward all people, including the elderly.

Purpose of the Study

The present study examined textbooks used in teacher education programs in Wales and in the United States, specifically at University College, Cardiff and at the College Park campus of the University of Maryland, to determine the extent to which progress has been made since 1980 in eliminating sex, ethnic and age stereotyping. The texts are or have been used in undergraduate teacher education courses at the two institutions in (a) psychology of education; (b) foundatons of education; and (c) teaching methhods.*

Questions addressed were:

1. Has there been a positive change since 1980 in selected teacher education texts in the portrayal of women as equal to men?
2. Has there been a positive change since 1980 in the treaatment of ethnic minorities in those texts?
3. Has there been a positive change since 1980 in selected teacher education texts in the treatment of persons 65 years of age or older?

Research Method

The textbooks in the study were examined in the following ways:

1. All of the graphics, including photographs, art work, cartoons, charts and graphs were analyzed to discern whether females and ethnic minorities were depicted as equal to males and the dominent white race and whether people 65 and over were shown.
2. Tables of contents and chapter headings were looked at for evidence of material regarding sex equity, ethnicity and concern for the aged.
3. An analysis was made of every tenth page of each of the texts for sexist or other stereotyped material; for material attempting to refute sexism or other stereotyping; for material showing society as multi-ethnic and multi-age level.

*The authors are indebted to Professors Bonnie Tyler and Dan Huden of the University of Maryland for suggesting and furnishing textbooks in educational psychology and education foundations.

4. Suggested readings were examined to determine whether they contained recently-published items likely to be concerned with sex equity, ethnicity and the aged.
5. Most of the data took the form of simple tallies which are summarized on tables I, II and III. In the case of chapters or sections of chapters devoted to stereotyping and equity, such material lent itself to digression rather than tabular reporting.

Findings

Research Questions 1. Has there been a positive change since 1980 in selected teacher education texts in the portrayal of women as equal to men? An affirmative response can be made based on the data, particularly regarding texts used at the University of Cardiff, where sexist language was reduced dramatically in the more recently-published editions and where the increase in pointed attempts to break down sexism increased markedly. (See Tables I and II.) However, at Cardiff the data from psychology and foundations texts are more impressive than data from the methods text. Also, one can note that it appears that the texts, pre and post 1980, used at the University of Cardiff contain far fewer graphics than those used at the University of Maryland. If, in truth, a picture is worth a thousand words, the books used at Maryland may compensate graphically for what is lacking in text.

It should be noted that in the 1982 edition of the Maryland methods text, a description of how children can help with classroom chores suggests that Jenny might keep the library table neat; Paul might be in charge of the game table; Kathy might keep the coat corner orderly and Peter could care for the aquarium. Sex bias in texts can indeed take subtle forms.

Further, it should be pointed out that more than 80% of the authorities cited by the authors in both editions of the three texts used at the University of Maryland are men. Certainly this makes a suggestion to the teacher education students using those textbooks and that suggestion is hardly subtle!

Research Question 2. Has there been a positive change since 1980 in the treatment of ethnic minorities in selected teacher education texts? The data from books used at both Cardiff and Maryland provide a rather mixed reading. (See Tables I and II.) The psychology and methods texts used at Cardiff indicated fewer incidents showing a multi-ethnic society in the more recently-published editions. The same thing can be said of the Maryland methods text. However, from the standpoint of graphics, both the Maryland psychology and methods texts indicate in the more recent editions efforts to portray an ethnically diverse society. Furthermore, the 1982 methods text used at Maryland includes material such as "social reality" (society as diverse); equity standards for the selection of children's books; senior citizens as resources to schools; social concerns as curricular priorities; the United states as multi-social, multi-racial and multi-ethnic; global education and world mindedness.

Also, the 1985 foundations book used at Maryland addresses issues such as whether U. S. schools are achieving desired social goals; whether schools should promote cultural pluralism; whether bilingual education should be abolished.

Research Question 3. Has there been a positive change since 1980 in selected teacher education texts in the treatment of persons 65 years of age or older? The response for texts used at both universities is that such change has been minimal. (See Tables I and II.) Foundations texts, pre and post 1980, contain no reference to those we term "senior" citizens. Psychology and methods texts make few references to older people. It should be pointed out, however, that the graphics in methods books used at both institutions do portray older persons in more recent editions, whereas none were portrayed prior to 1980. Nevertheless, the data indicate that the teacher education texts surveyed are to a great extent ignoring a rapidly-growing element of society at a time when research indicates a need for schools to work to help children to develop more positive attitudes toward the elderly.

In the belief that the courses in question (psychology, foundations and methods) may attempt to deal with stereotyping through published suggested readings, an analysis of the publication dates of those readings was made for each of the three courses in the study. These data are contained in Table III. As can be seen, each course contains a number of recent publications among its suggested readings, with courses taught at the University of Maryland containing a somewhat greater percentage of post 1980 readings than the courses taught at the University of Cardiff.

Summary and Conclusions

The data gathered in the study indicate that the particular textbooks analyzed appear to have fewer incidents of stereotyped material in recent editions as opposed to editions published prior to 1980. This is particularly true with regard to sex bias and less true from the standpoint of ethnic bias. Nevertheless, the data indicate employment of sexist language and other sexist material in the post-1980 editions, and thus a need for continued efforts toward sex-neutral materials for use in teacher education. The data also indicate a need for teacher educators to insist on more material portraying a multi-ethnic society in texts used by their students.

Regarding age stereotyping, the findings are of a different nature. The texts examined showed little, and in some cases no, effort on the part of the authors to show even the existence of an aged element in society. Thus, bias through omission was very much in evidence with far too few exceptions. It seems indefensible to imply to those who will teach children a non-existent or unimportant role in society for older persons. There is thus a challenge for teacher educators in the late 1980's to ascertain that youth will be taught by teachers sensitive to society in all age stratefications.

Table I

An Analysis of Ten Per Cent of Pages in Selected Teacher Education Texts: Pre and Post 1980; From Wales and the U.S.

	incidents of sexist language	incidents showing multi-ethnic society	indidents dealing with senior citizens	incidents of attempt to break down sexism
Used in Wales				
Psychology, 1977	48	8	1	141
Psychology, 1981	1	2	5	259
Teaching Methods, 1980	16	5	1	1
Teaching Methods, 1983	1	2	0	0
Foundations, 1975	27	0	0	16
Foundations, 1981	20	143	0	194
Used in the U.S.				
Psychology, 1979	42	0	0	7
Psychology, 1985	35	0	0	12
Teaching Methods, 1977	7	16	2	9
Teaching Methods, 1982	2	7	2	6
Foundations, 1980	17	2	0	1
Foundations, 1985	16	5	0	1

Table II

An Analysis of Photographs and Other Graphics in Selected Teacher Education Texts: Pre and Post 1980; From Wales and the U.S.

	Females Shown as equals	Minorities Shown as equals	Persons Over 65 Depicted
Used in Wales			
Psychology, 1977	0	0	0
Psychology, 1981	0	0	0
Teaching Methods, 1979	0	0	0
Teaching Methods, 1983	1	0	2
Foundations, 1975	0	0	0
Foundations, 1981	0	0	0
Used in the U.S.			
Psychology, 1979	5	6	0
Psychology, 1985	4	10	0
Teaching Methods, 1977	16	7	0
Teaching Methods, 1982	22	11	4
Foundations, 1979	1	1	0
Foundations, 1985	1	1	0

Table III

An Analysis of Suggested Readings for Selected Teacher Education Courses, From Wales and the U.S.

	Pre 1980	Post 1980
Courses in Wales		
Psychology	9	4
Teaching Methods	159	30
Foundations	27	7
Courses in the U.S.		
Psychology	48	97
Teaching Methods	115	48
Foundations	80	51

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STUDENT-TEACHER RELATIONSHIPS

WEDNESDAY, 16 JULY

1100 - 1230

THE STUDENT-TEACHER RELATIONSHIP AND MOTIVATION FOR STUDENT LEARNING: PRIMARY DIMENSIONS OF EFFECTIVE TEACHING

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Teaching is a relationship. Regardless of what is viewed as indispensable to effective teaching, the essential aspect of the teaching situation is that it is a relationship between the teacher who is attempting to teach someone and the student who is attempting to learn. The relationship between teacher and student is a necessary--and never a contingent--dimension of the teaching situation. Any discussion of effective teaching must, therefore, include a consideration of this dimension of teaching. Yet, the literature seldom directs its attention to the topic.

The relational character of teaching entails that the teacher give significant attention to the dynamics of motivating the student to learn. Without proper motivation, the student will not learn, and where learning does not occur, teaching has not occurred. There may be lectures; there may be "instruction," but if no learning has occurred such activities as lectures and instruction do not constitute teaching. The purpose of this paper is to explore the topic of effective teaching with special attention to the relational aspect of teaching, to the motivational dynamics of effective teaching, and how the former contributes significantly to the latter.

Effective teaching is, to be sure, a multidimensional activity and relationship; so, to say that the student-teacher relationship is a necessary part of the learning/teaching situation is not to say that it is the only dimension or even the only necessary, noncontingent dimension. But, the failure of the literature to give significant consideration to the topic not only justifies giving the topic important consideration but points to the cruciality of doing so. Many constituents of "effective teaching" are readily discussed in the literature. In what purports to be an exhaustive description of college teaching, Henderson and Henderson (1975) observe that effective teaching requires the knowledge of the following: educational methods; the teaching-learning process; a variety of teaching methods such as lecturing, tutorial, discussion, and explication of the text; principles of learning; types of leadership; and team teaching. Moreover, the Hendersons realize that student involvement, student learning rather than subject matter, and the development of the student's power of thinking are important dimensions. These considerations indicate that the Hendersons are aware of the central determinant of effective teaching--

namely, the student-teacher relationship. Yet, despite the realization of this importance (demonstrated also by their decrying the lecture method in which the students are passive and information flows only one way) (Henderson, p. 128), they merely mention that good teaching requires intercommunication and a dynamic interrelationship between teacher and student. The important question of how this relationship is to be described or developed is ignored. Other writers are likewise silent on this most important dimension. Authors such as Eble (1972), James Lewis, Jr. (1973), Richard L. Meeth (1977a, 1977b), Vermilye (1976), Ashby (1977), Dennis (1976), and Popham (1973) discuss issues regarding faculty improvement, teacher performance, individualizing instruction, and teacher evaluation without so much as mentioning the faculty-student relation as a significant aspect of the educational process. Nevertheless, teaching is essentially relational, and the interaction between student and teacher is of primary concern. The teacher who views the interpersonal relationship between the student and teacher as a primary concern will give significant consideration to the ways of motivating students to learn. The two preceding statements are like "chicken or egg" or "stomach and food" statements. Each presupposes the other. If teachers are interested in the student as a person and the student-teacher relation, they will be interested in attempting to motivate the student to learn. And the teacher who attempts to motivate the student to learn is, in so doing, contributing to the student-teacher relation, i.e., is being student-centered. (Cf. Caraway, 1983)

Among the ways in which teachers evidence concern for students as persons is their interest in motivating students to learn. Let's consider a few of the factors which may contribute to motivation for learning. Of course, the description will not be exhaustive, but we can use these as a springboard for critique and discussion.

Consider briefly what it means to say that we try to motivate someone to learn. We cannot make a person learn. We can, however, attempt to create a climate or provide an environment in which learning can more readily occur. Motivation merely means "the willingness to engage in behavior." Synonyms include: stimulus, catalyst, impetus, impulse, incentive, incitation, incitement, instigation, spur, stimulant. When engaging in any activity, one of our primary concerns is: Can I do it? What are my chances for success? Other concerns follow immediately: What is the reward, the payoff? Will anything bad happen if I fail? Will the reward or results of my activity be worth the effort? Is the possibility of failure worth the risk? Have I been successful in similar endeavors in the past? Do I now have the resources, skills, for success?

How can the student-centered teacher help to create a climate in which the student will be able to answer these questions affirmatively and hence be willing to engage in attempts to learn? Several possibilities come to mind.

First, when students are considering whether the possible payoff will be worth the effort or whether the risk will be worth the possibility of failure, they are asking if there are sufficient grounds to warrant the attempt. Hence, one major motivating factor is the essentiality of the material or the course of study. The teacher should be able to inform the student of the importance of the material, course of study, or class for the individual's own life. Students will learn more readily if they are convinced that whatever they are asked to learn is "worth something," i.e., if it contributes in some way to their well-being. If there is no reason to learn, then, why learn?

A second dimension in motivating students to learn consists of designing success experiences for students. If one of the main considerations involved in motivating persons to action is whether or not the person will be successful, then, it follows that teaching strategies which are designed to enable the student to experience initial success will serve as motivators. Both Bloom's (1982, p. 18) and Bruner's (1977, p. ix) research have led them to conclude that over ninety percent of the students could learn virtually any material if it is taught in a manner appropriate to their development. Hence, teachers could motivate students by using proper diagnosis to determine where the students are, begin where they are, design the material so the students could experience initial success, and this initial success would motivate students to attempt subsequent learning activities.

A third contributing factor in motivating students to learn is "Beginning where the student is." This is a significant aspect of any teaching endeavor. Ausubel (1968) affirms that all learning is essentially assimilation of the new material or experience into a previously acquired or developed structure of meaning. And Bruner emphasizes that knowledge should be approached "in the spirit of making it accessible to the problem-solving learner by modes of thinking that he already possessed or that he could, so to speak, assemble by combining natural ways to thinking that he had not previously combined." (Bruner, 1977, p. ix.) Beginning where the student is is a major factor in designing success experiences.

Designing success experiences is not only a motivator in and of itself, but it also serves as the basis for a fourth motivational dynamic, namely, developing in the student a sense of competence. As the student experiences a succession of successes, these reinforce each other and contribute to the student's developing a sense of competence. Having a sense of competence is an inherent motivational force which contributes to the person's willingness to engage in behavior on the basis of one's own volition and with few or no external motivational factors. The person who has a sense of competence freely attempts tasks, activities, endeavors which one without this sense would reject outright. A competent person who is assured of the essentiality of the material will work on his or her own and require little external influence.

Reference to the fact that the sense of competence becomes an inherent motivator leads us to consider the phenomenon of rewards as a fifth dimension in motivation. Rewards may be considered generally under the categories of extrinsic, intrinsic, immediate, or long range. Just as the teacher needs to know where the student is in terms of the subject matter, he or she also needs to know the maturity level of the student in terms of the reward structure to which the student currently responds. An immediate payoff for performance may be the expectation of more immature learners. If this is the case, the student may be motivated to learn (to some degree at least) on the basis of some grading structure or by the realization that success in the learning experience will lead to a job, immediate advancement or some other external reward. The teacher may have to start with this conceptuality, but the hope is that the student can be led to an understanding of learning that will view learning as inherently valuable, applicable for more than mere career considerations (e.g. quality of life), and long-range. In any event, the consideration of rewards for learning is an important aspect of motivating the student to learn.

A sixth motivational factor to be used in the actual teaching situation is the teacher's use of "advanced organizers." Ausubel makes much of these. They are simply outlines of what is to be learned. They are essentially maps or comprehensive pictures of what is to be learned. Advanced organizers put the various aspects of the learning material into a context which makes them make sense. They guide students in what to expect and prepare them for what comes next. This leads to a comprehensive understanding and meaning and avoids reducing the students' viewing the material as disjunctive, disconnected and, therefore, meaningless. Advanced organizers contribute to learning retention and make learning easier.

A seventh motivating factor in the learning situation is the clarity with which the learning expectations are delineated. Clarity of expectations permits the students to be sure of what is expected of them and allows them to get immediately on task. The teacher should state with as much clarity and specificity as possible what is expected of the student, and then insist that these expectations be met. Too many professors give some vague, general indication of what they expect and then are amazed that they do not get some specific something or other that was still hidden in their own minds. They insist that what the student is expected to know remain a mystery, as if this would lead the student to learn more. But, professors' failure to state clearly what they expect students to learn in order that the students can learn exactly what the professor considers important is itself a mystery.

All of the foregoing contribute to an eighth factor in motivation, namely, the environment. The previous dimensions I have described themselves contribute to establishing an environment in which learning can more readily occur. It is equally important to make sure that the physical environment contributes to an optimum situation for learning. Considerations should include equipment, light, heat, acoustics, learning materials, comfortable seating, spacious areas, etc.

An extremely important dimension of motivation is accurate, concerned knowledge of the student. Too often, decisions are made about teaching with little or no significant knowledge of the student. If medical doctors, lawyers, and even financial consultants attempted to serve their clients with as little or as distorted knowledge of them as we often have of our students, they would immediately face numerous malpractice suits. We often confuse the things we know about the student with knowing the student. Knowing about a thing is an essentially different way of knowing than knowing a person. The former is merely external, "objective," knowledge based on observation, reports, test scores, findings or whatever. The thing known about is passive. It does not directly or actively contribute to the knowing process. Hence, we can know about a student the same way we would know a thing. For example, Mary is five feet nine inches tall, weighs one hundred twenty-seven, has blond hair, blue eyes, is in the eleventh grade, the daughter of a medical doctor, and drives a baby blue Porsche. She makes C's and a few B's and has a 20 on her ACT. But these facts, however important, do not constitute real knowledge of Mary. They are things which we know about her. We know these things as an external observer. We do not know Mary's essential values, beliefs, desires, and interests. However, if we really get to know Mary, instead of merely knowing about her, a different approach to knowledge is necessary. In knowing about something, i.e. by observation, the known is passive, does not contribute to the knowing process. But in order to really know a person, that person must be active, must reveal himself to us. The kind of knowledge which is revealed to us, and not that which we gain by mere observation in which the subject is not involved, is the real knowing of someone. And it is the knowledge gained when the person chooses to reveal himself to us that is the significant knowledge of that person which may enable us as educators to make the appropriate decisions concerning how we will attempt to teach them--or indeed relate to them in any significant way. In short, in order to motivate students to learn (or in order to relate to anyone in any significant way) we must not merely know about them but we must also know them. I will describe this distinction more fully later.

An important dimension of this knowledge which contributes to our ability to motivate is the knowledge of how the student learns. Most of formal educational attempts proceed as if students learned only, or at least primarily, in a cognitive fashion, i.e. by using abstract concepts. Current teaching research, however, reveals that different students learn in different ways or use varied learning styles. Some students learn primarily through concrete experience, through sensing and feeling. Others learn through reflective observation, through watching. Many students learn by active experimentation or doing. And others, thankfully, learn by use of abstract concepts. A knowledge of the various ways in which students learn and the ability to help students learn to learn by using a variety of styles will contribute much to motivating students to learn. But, teachers cannot accomplish this task unless they know the student; mere knowledge about the student will not suffice.

In the preceding I have affirmed the importance of the relationship between the student and the teacher in the learning situation, and I have described several dimensions of motivation as vital constituents of a person-centered approach to education. In so doing, I have not meant to deny or belittle other important aspects of effective teaching. For example, the teacher's knowledge of the subject matter is a sine qua non for effective teaching. Knowledge of a variety of teaching methods, knowledge of learning theory, a comfortable and pleasant environment, proper evaluation methods, and others are important components of effective teaching. But these are adequately covered in the literature. (Cf. e.g. the works cited on pp. 2-3 and Caraway, 1978, 1981, 1983).

Let be noted that all of the above are important dimensions of effective teaching--a thorough knowledge of the subject matter should go without saying. However, the persons attempting to teach may know their subject matter thoroughly; they may know all the requisite learning theory; and the physical environment may be most conducive to learning. Yet, there nevertheless may be no effective teaching. The interpersonal relationship between the student and the teacher becomes the major dynamic contributing to a successful learning experience. The student-centered teacher will be aware that he or she needs to know the student and not merely know about the student. In short, such teachers will relate to the student as a real person and not merely as a thing. What do I mean by this?

In various writings Martin Buber describes reality as essentially relational. There is no reality which exists in and by itself. Every actuality is always related to at least one other actuality. The world is made up of relations between person and person or between person and thing or between thing and thing. Relations between persons and things, Buber calls I-It relations, while he refers to relations between person and person as I-Thou relations. In our subsequent description, I will refer to these as I-You relations. I-It relations are essentially different from I-Thou relations. Educators who are interested in motivating students to learn will attempt to relate to students as persons (i.e. an I-You relation) rather than as things (i.e. an I-It relation). How are these two essentially different relations to be understood? For the purpose of outlining some characteristics to help distinguish between I-It Relations and I-Thou Relations, consider the following:

I-It Relations	I-You Relations (Student-Centered Relations)
Persons are "things"	Persons are "persons"
Unbelief	Trust
Power/Ownership/Control	Concern/Sharing/Assisting
Owned	Free
Used	Not subject to use
At disposal	Not at disposal
No mutuality	Mutuality
No reciprocity	Reciprocal relations
Non-responsive	Responsive
Communication: One-way	Communication: Two-way or Multi-directional
Manipulative	Sharing
Closed	Open
Static	Dynamic

"Dead"	Living
Predictable	Unpredictable
Repetitive	Novel
Limited	Boundless
External	Intimate
Broad categories	Subtle
"Finished"	Lasting/Continuous/Developing
"In place"	"Walking about"
Alienated	At-one
Narrowly defined	Open/Flowing
Stratified	Blended
Heteronomous	Autonomous
Demeaning	Fulfilling
Know about	Know
Conditional acceptance	Confirmation
Calculative knowledge	Existential
Objective/Distance	Subjective involvement

My intent in the preceding illustration is to use a series of words which distinguish between I-It and I-You--i.e. Person-Thing and Person-Person--relations. The illustrations are not mere check lists the components of which are added to see where one stands on the student-centered scale. Each descriptive word in each column is not to be viewed as completely distinct from the others in idea and meaning. Rather, the words are used to paint a word picture. Just as the different and distinct colors an artist uses lose their distinctiveness as they are layered and blended to produce a richer, deeper, fuller, more complex portrayal than would the colors viewed side-by-side or in sequence, the words which I have used in the illustration are to be seen as layered and blended to produce a single expression describing the differences between I-It and I-You relations. Some of the words in each column may be virtually synonymous, but each is used to help round out the meaning, to add a slightly different nuance or perspective.

Some of the words in the contrasting columns are self-explanatory. Others warrant some explanation. In I-It relations people are treated as things, as means to an end, to be "used," "manipulated," and then dispensed with. They are "at the disposal" of the other person. In the I-It relations, the interaction is characterized as "unbelief." Neither party in the relationship believes in or trusts the other. The demand for proof and the use of rules and contracts is characteristic of the I-It relation and indicative of the lack of trust. If students are treated as things, merely to be used, it follows that there is no mutuality and reciprocity in the relation. Communication is one-way only, from the teacher down, and relations are narrowly defined. The student is essentially controlled by the teacher and not accepted as a person in his or her own right.

Relations in such situations can be described as "closed," limited, and predictable. Everything is defined and controlled in terms of the way in which the teacher views it. Such relations between teacher and student which are static and repetitive can also be described as "dead" or "finished" for they offer no real possibility for creativity, spontaneity, free actions, or variability. Each person is "in his or her place," just as objects are "in place"; relations are layered, stratified, bureaucratically conceived. Alienation is all pervasive, alienation between teacher and student, student and student, teacher and administrator, and administrator and student.

Student-centered relations are sharply contrasted from these. In student-centered relations, the persons involved--both teachers and students--are "ends" in themselves, not mere "means" to organizational ends. Person-centered relations are characterized by mutual trust, which means belief that the people relating are persons of good will, that no one is seeking to harm the other, and that they are working for each other's welfare. Each person's worth is affirmed, and belief in the ability and possibility of each student is exemplified. There is mutuality and reciprocity in interpersonal relations. Communication is multidirectional, and each person can and does respond to the other freely. Person-centered relations, i.e. student centered relations--are open, dynamic, and living. This indicates that they are not bound to rules, precedent, "the book" to such an extent that everything is done as it always was, completely subject to rigid law. Instead, the situation can always be unpredictable to some extent; the participants are open to novelty, new ideas, and various ways of doing things. The possibilities are boundless, and the relations can be lasting and continuous since they are not limited to a pre-set number of variables. The acceptance of mutual responsibility encourages all participants to express ideas openly and freely where they can be analyzed from all possible perspectives. In such a milieu real learning can occur. In a student-centered learning situation the teacher really comes to know the student rather than merely knowing about the student. While to know about includes only external knowledge about the students--their grades, GPA, ACT, parental income, father's occupation, etc., knowing students entails mutual and direct relations with students, relations which involves not mere knowledge about facts of the students' life, but involve intricate and subtle knowledge of the students, their goals, interests, desires, ideas, ways of thinking, values, and concerns. Person-centered learning, then, gives the students a real sense of personal worth, eliminates the alienation often prevalent in student-teacher relations, and frees students to completely immerse themselves in the learning process. The way in which the teacher knows the students in student-centered relations enables the teacher to make the complex, subtle, and individualized distinctions necessary for personal understanding and success in learning and teaching.

It is my contention that the most success will occur in the teaching-learning situation if the relations within that situation are person-centered. The worth of all participants will be affirmed; the teachers will care for the students enough to attend to a variety of motivational dynamics; and the students will not merely experience greater success in learning but will also be able to do so with a sense of joy and fulfillment.

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THE USE OF RETREATS TO BUILD BRIDGES AND BREAK BARRIERS BETWEEN STUDENTS AND FACULTY

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> But if there is one truth about modern man, it is that he lives in an environment which is **continually changing.** The one thing I can be sure of is that the physics which is taught to the present day student will be outdated in a decade... Chemistry, biology, genetics, sociology, are in such flux that a firm statement made today will almost certainly be modified by the time the student gets around to using the knowledge... We are, in my view, faced with an entirely new situation in education where the goal of education, if we are to survive, is the **facilitation of change and learning.** [1]

The purpose of this paper is to present findings of a pilot project that introduced a faculty supported and student led retreat to create a climate for and disposition towards active learning in the classroom. Learning theory and current research are used as the conceptual rationale for introducing the retreat to engage students who, because of the need for commuting, employment and family responsibilities, are not connected with each other, their program, and the class faculty. The retreat process in the social work program which is used as an exemplar demonstrates how retreats may be used as a learning tool across international boundaries to minimize student resistance and barriers and to build bridges between students and their program faculty.

Rationale

The field practice seminar for senior undergraduate social work students has evolved over a number of years from a course in which students were taught methods of social work practice and professional values and ethics, to its present form which provides students an opportunity to integrate classroom theory with field practice through a focus on specific competencies which are woven throughout the curriculum. The faculty who originally taught in a preprofessional program in the school of education, believed in the importance of the role of facilitator and of learning which involves the whole person, his or her feelings and personal meanings. Their experience in that program had taught them a number of things about how students learn, which are succinctly delineated by Carl Rogers as follows:

1. Human beings have a natural potentiality for learning. Significant learning takes place when the subject matter is perceived by the students as having relevance for his own purpose.
2. Learning which involves a change in self organization - in the perception of oneself - is threatening and tends to be resisted.
3. Those learnings which are threatening to the self are more easily perceived and assimilitated when external threats are at a minimum.
4. When threat to the self is low, experience can be perceived in differentiated fashion and learning can proceed.
5. Much significant learning is acquired through doing.

6. Learning is facilitated when the student participates responsibly in the learning process.

7. Self-initiated learning which involves the whole person of the learner - feelings as well as intellect - is the most lasting and pervasive.

8. Independence, creativity, and self-evaluation are basic and evaluation by others is of secondary importance.

9. The most socially useful learning in the modern world is the learning of the process of learning, a continuing openness to experience and incorporation into oneself of the process of change.[2]

The faculty believed that the effectiveness of future social workers would be directly related to their developing sense of self awareness.[3] For several years the faculty had been trying to achieve a balance between the intellectual and affective domains in the classroom. In recent years, however, there seemed to be a pendulum swing from a major focus on the affective, to the intellectual. The faculty became aware of this swing after an end of year evaluation of the seminar, when students complained of not having become a group and not having had an opportunity to know one another well enough. At the same time faculty were feeling that there was a distressing level of defensiveness and resistance on the part of the students, and that while they were involved in the classroom and assignments, there was a reserve which was difficult to penetrate which left one with the feeling of not having really touched them. Faculty were not certain about what learnings students actually internalized.

What the faculty and students seemed to be experiencing in this swing toward a more intellectual and textbook approach to learning, was a plateau at what Maslow identifies as the second order of need for safety and security. This appeared to create unmet needs of a higher order, the social needs, ego needs,and self actualization which are required for the disposition towards learning.[4] In contrast to the intellectual focus, learning theorists such as Richardson, Dewey, and Peters note that personal relationships and the insights discovered from learning experiences are fundamental to knowledge building.[5][6] The Tavistock model developed by Dr. Wilfred Bion and his associates at the Tavistock Institute of Human Relations in the United Kingdom, and replicated in the United States by Margaret Rioch and her colleagues of the Washington School of Psychiatry, demonstrates the ability of groups to learn by defining its primary tasks and focusing on the nature of the relationships developed in the group.[7] These served as the theoretical forces which stimulated the faculty to look for alternative ways to connect students in the pursuit of learning.

The Retreat Process

One faculty member had taught an elective class during that semester,in which there were several students from another major enrolled. These students were envied for their enthusiasm generated by having had the opportunity to participate in several weekend "retreats" with two faculty members from their department. Several times during the semester, the value of the retreat was reported. In discussing various alternatives for improving the course, the idea of a retreat along with Carl Rogers' views about learning were introduced and generated a great deal of enthusiasm among the students.

At the beginning of the next semester, as a pilot project, enough copies of Rogers' Freedom to Learn [8] were ordered for one section of the seniors' field practice seminar, and students were asked to read it, focusing on Chapter 3, "My Way of Facilitating a Class". It was suggested that they think about the "retreat" idea. The response of the class was overwhelmingly enthusiastic. Several students voiced concerns about previous seminars being too didactic, too narrow, and not allowing enough freedom to explore individual interests. The class unanimously took hold of the idea of the retreat. To get started, each member of the class agreed to do an initial self evaluation based on the competencies listed in the syllabus for the course, and to set learning goals for the semester which would be pursued through reading, field work, conferences with supervisors and professors. Each student agreed to submit to the professor a weekly report of learnings for the previous week. The professor agreed to read these reports, make suggestions for additional areas of exploration, and return them to the students at the next session. This removed from the faculty member a certain amount of pressure to "cover the syllabus" and helped prevent the tendency of the students to coast and ride the coattails of the few energetic students. As a result of the weekly reports, the professor was more in touch with where the students were in their learning and the problems which they were experiencing in field work.

The time spent in the classroom was initially used to discuss practice issues and dilemmas and to plan for the retreat. The planning became a learning activity because it was a parallel process of the problem solving approach taught in the school. Discussions with the administration as to the feasibility of the project, obtaining commitments from students, meetings with the faculty members who had conducted retreats in another department, and exploring the possibility of a site comprised the study phase of the project.

A three room cabin in the summer camp of a local social service agency was secured for the weekend. Students developed and prioritized a list of goals for the weekend which included in order of priority: self awareness, values clarification, development of cohesiveness, increased creativity, skill development in listening, constructive feedback, conflict resolution and group work skills. These items are not mutually exclusive and represented what the students were hoping to obtain from the weekend.

A schedule was then developed based on the statement of goals. Four two hour talk sessions were planned, as well as time for cooking, hiking, and socializing. The weekend began at 9:00 a.m. Saturday and would end at noon on Sunday. A film, projector and screen was ordered to help stimulate discussion, and the students agreed to see a film which dealt with the various ways members of a family dealt with a tragedy in their lives, which was playing in a local theater.

The weekend began without incident. The initial talk session began easily and the level of trust began to be tested as the students talked about their reactions to the film and the way they had dealt with problems in their own lives. At various points in the day, the faculty member asked for short written comments from each student as to how he or she was feeling. Some of the initial comments were as follows:

> I'm presently experiencing conflicts and ambivalence regarding the potential for me to share painful past issues. It may be connected with a feeling of trust, intimacy and commitment which are big issues for me.
>
> Right now I am feeling really good about myself because I was able to express myself to the group which was something that I felt I was unable to do. I felt good about the members because they seem to have accepted me and were responsive.

The weekend was a powerful experience. Every student opened up and shared experiences which had happened in his or her family, school, or field work experience which had been difficult, exciting, and created learning. A number of students told about having had some difficult emotional or psychiatric problems for which they had been hospitalized. Their greatest fear was that no one would understand, and that people would view their experience negatively, rather than as a growth producing experience which would increase their empathy with their own clients in the future. Whereas before, faculty were telling students about the social work practice concepts of trust and intimacy, now students were explaining to faculty and others what they had discovered about these concepts.

What was most important about the weekend was that a climate had been established that made it safe to express one's thoughts and feelings. This satisfied Maslow's second order of needs, and allowed students to move through the next order of needs. What often took the greater part of two semesters, and in the previous year had not happened at all, took place in the first two months of one semester. From that point on, the excitement continued to build, the spirit and the sharing of accomplishments continued throughout the year. Although some members expressed anxiety during the following weeks, many reported feeling more in touch with clients in field practice, and more connected with family and friends. Bridges had been built between the students, between the students and their clients, friends and families, and between students and faculty.

An open ended report was submitted by the students within the two week period following the experience. The following statements were noteworthy:

> I realized how much pressure I am under. One of my pressures is school but that will be eased by making more time for it... by quitting my job, I don't really need all that money, accepting failure in subjects I don't need, and taking an incomplete in a subject I need and care about, and by listening to people who know me and know what they are talking about... My expectations are too great for myself...
>
> I was able to feel a part of the group after joining in a personal manner. Its very easy to allow myself to remain superficial to others by avoiding what 'I' am.
>
> My experience at [my agency] Sunday night was one of the most fulfilling since I started there. I know the retreat gave me a strong sense of connection with people and somehow this was transferred to the clients... I think my ambivalence in the beginning [of the retreat] was a defense against involvement and commitment which has always been real fears of mine... I thought the weekend was a positive experience and my next letter to you will involve more on group process and patterns of communication.
>
> On Monday I was able to talk to [another student] about the insight I had gained concerning my family. I guess I was brought up to keep my feelings to myself... What I gained from the weekend was the realization that I am preoccupied with what I should and should not say.
>
> The timing was perfect yet came across almost naturally, at least for myself...I got angry during the second session because you had recognized my inability to share my feelings at a gut

> level. I have learned to take more risks in the sharing of my feelings and you should feel very proud of your contributions.
>
> Its pretty evident to me now that I have a hard time talking to people on a personal level. It was all so superficial and I was projecting that onto them [the other students]. The whole weekend has been like a revelation to me...I'm thinking that this is probable my new contract with you, getting to know this new person inside of me...I'm trying to say that this is going to be a difficult task so don't place expectations on me that I may be unable to fulfill.- of course, you haven't placed any on me. I've just done it again - projecting my expectations onto you and blaming you for them. What a great feeling to be able to see that.
>
> Experiencing that weekend reminded me that I was a human being with emotions, something a person can forget getting wrapped up in the pressures of school.
>
> Later in the week after the retreat there were three or four of us sitting together in the Student Center and we felt that 'we had something that no one else had'...I've opened up a new part of me and I also feel I'm in the process of growing... I am learning to be more open and understanding of other people... It was an experience which has opened me up a bit and allowed me to experience people, subjects, life.

These student summary evaluations vividly reflect how the retreat process contributed to less defensive and more sensitive future social work practitioners. Current literature in the profession suggests alternative usages for the retreat. Singer and Acs, for example focus on the professional acculturation aspect rather than on the concern for self awareness.[9] Whatever the focus, this type of experience offers opportunities for collaboration between faculty and students in the pursuit of knowledge, the integration of theory and practice, and the development of self during this period of economic change.

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WHY COLLEGE TEACHERS DON'T TEACH NOR SHOULD THEY

Renee C. Jesness

This country's comprehensive educational system is designed for students to gain a rudimentary, if not working, knowledge of the fundamentals of our society, the world community, and basic skills in every day adult living. Given this goal it may be acceptable, if not expedient, to aim at this through the traditional teacher-dominated, teacher-led classroom learning experience. The teacher as expert in a particular field of study, equipped with an operating repertoire of teaching models, overseen by a larger advanced organizer - the state and local curriculums - does this task not without error, but pretty doggone efficiently. So be it. Predominantly teacher-centered learning in primary, intermediate, and even secondary compulsory school is understandable.

The acceptability of a teacher-centered learning experience does become much less acceptable and much more questionable in higher education. Trade schools, state universities, liberal arts colleges, research institutes - what are their goals? What is the aim employed in each form of higher education that achieves those goals? This article will not assert a main goal over all of higher education. Rather, the multiplicity of goals ranging from direct job skill preparation through scholarly pursuits and beyond does have a common thread - the student as client. This article will focus on one particular form of higher education - academia. It will explore some of the strategies the university employs and will suggest why some of the aims should not be what they have become.

Academia's "The Lecture"

One of the predominant strategies employed in academia today is the lecture. In fact, the lecture could be said to be almost a universal experience belonging to all branches of higher education. The trade schools might concentrate on hands-on types of student experiences, and the lecture may be a little more alien than routine for a trade school student; nevertheless, it does exist on trade school campuses. Private liberal arts colleges may tend to shy away from lecture in lieu of discussion formats which are facilitated by small class sizes, yet the lecture is no stranger to the liberal arts student either. Research institutes traditionally offer their core course in the lecture format. Medical schools and law schools often have conventions already in place for students to set up in teams in which one member attends lectures and duplicates the notes for the rest of the group. It certainly is the rule rather than the exception at state universities, where hundreds of students are herded into great lecture halls for a variety of 101 courses to copiously scribble notes of the observed "performance on high." Academia is steeped in the lecture format. What place does it really have in higher education?

One of the first things that should be realized is that the lecture is a teacher-directed learning experience. The place that it has in academia has been supported to a faultingly large degree by the student who is lulled into a sense of really gaining knowledge via an authority figure. Teachers had structured the learning experience throughout younger years and high school. Having the same thing done in college is a "natural" extension of the learning situation. Students have become very comfortable with their receiver role in education. It is a very difficult thing for the student to take the initiator role in his own learning. Yet, without an initiation of his own learning what control does he have over the mastery of it? Without control where does that place the responsibility for learning and its outcomes?

Many professors do not make it easy for students to assume the initiator role in higher education. In fact, student initiated learning, if it is not in direct lines with the course content or the professor's biases, rarely will be rewarded in academia. There seems to exist somewhere the notion that professors have a corner on the market of knowledge, and once the student has paid his dues, that is, gone through the prescribed material, he might then be supported in independent research. The unfortunate thing is that the student in higher education today seems not to attempt to strike out on his own until the graduate and doctorate level. Even at that level many students are falling in behind the ranks.

The student's willingness to accept the lecture as an optimal learning situation is one problem. The other is that there is a whole set of professors who feel that they are "teaching" when they are lecturing. There are researchers who would say that the lecture is the most efficient way to transmit information. There is a wide array of educational psychologists who maintain that meaningful learning and retention through lectures exists. David P. Ausubel is the researcher they cite. The model that is used is the "Advanced Organizer Model."[1] The model promotes active reception learning by building on cognitive structures already existent in the student's mind. Hence, Ausubel's model justifies the lecture format. A criticism of the employment of this model is in the "building-on-cognitive-structures" stage. This is a very difficult thing to do, and most professors when using the advanced organizer notion in delivering lectures mistake "enthusiastic delivery" and "interesting content" for inherent building of cognitive structures. This simply is not so. One cannot build on cognitive structures without a dialogue with the students, without diagnosis of the students' cognitions. A lecturer makes assumptions about the cognitive structures of the receivers and invites very little discussion. A "good lecturer" may make the receiver feel like she is eminently aware of the receiver's cognitions, but assumptions do not often yield good diagnoses. Without diagnosis there can be no building on cognitive structures - just dissemination of information.

The lecture is probably the most widely spread teacher-directed tactic employed in higher education today, especially in academia, and it is not the only one. There exists in academia a faulty premise upon which both the student and the teacher enter into the learning situation. The premise is that the student is there to learn what the teacher teaches. If such a premise is true it is difficult to see the difference between higher education and compulsory education in this country. The keenest acknowledgement of this premise is the "objective test." With little, if any, concern for practical application of course content, it measures the accuracy of input through transcription - transcription of multiple choice, true/false, matching, etc. Like the court stenographer, the student can "read back" information obtained in lectures and text materials. An "A" means he got down every word. It's a neat little input-output package.

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[1] David P. Ausubel, "The Use of Advanced Organizers in the Learning and Retention of Meaningful Verbal Material," Journal of Educational Psychology, 51, (1960), 267-72.

Burton Clark, a professor of higher education and sociology at the University of California last year delivered a speech at the meeting of the American National Academy of Education held in Lindingo, Sweden. It's title: "The High School and The University: What Went Wrong in America."[2] This speech is highly critical of what Clark perceives to be a lack of excellence in higher education. While many would agree with Mr. Clark that the baccalaureate has become little more than a second high school diploma, I submit that this is so because the responsibility for obtaining a higher level of understanding of the world and its workings is not in the student's control. The professor is, for the most part, controlling the pursuit. Motivators for acquisition of knowledge then become external to the student.

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[2] Clark, Burton, R. "The High School and the University: What Went Wrong in America," Kappan, Feb. 1985, p. 391-97, and Kappan, Mar. 1985, p. 472-81.

This predicament is especially curious because of the unique position of the student in higher education. Unlike his K-12 learning encounter, this encounter is not paid for and prescribed by the state. She is the client. The dollar-per-hour amount this student pays for this encounter entitles him to some autonomy in directing the course and style of the instruction. What students and professors both seem to overlook is this client-consultant relationship which could exist in higher education. The learning situation should center around the client, that is, be student-centered, and often times student-directed. Rather than waste the talent and expertise of the teacher in delivering lectures, she would be the postulator of problems for student inquiry, and the co-explorer in finding answers to those inquiries. "The norms of inquiry are those of cooperation, intellectual freedom, and equality."[3] A strength of using an inquiry approach in higher education is that the intellectual environment is open to all relelvant ideas. Knowledge becomes a true pursuit rather than a recapitulation of some finite KNOWLEDGE.

There are other teaching strategies which lend themselves to student-directed learning. The concept attainment model as set out by Jerome Bruner[4] can be modified for college students. One way to get students thinking more holistically about subject matter is to have them define the attributes of an object of study, have them generate and test hypotheses. The professor then acts as consultant to the study, helping the student to assess broad areas necessary to continued research, or helping the student to delimit gray areas. Although this model relies heavily on the consultant (professor) students do end up assuming a high amount of initiative for the inductive process.

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[3] Joyce, Bruce and Marshal Weil, Models of Teaching, Prentice-Hall, Inc., New Jersey, 1980, p. 70.

[4] Ibid, p. 25-46.

Non-directive teaching models frequently focus on the students' affective concerns but can be useful for academic pursuits. The importance of such a model is that the student initiates and the teacher facilitates in the student's personal awareness and self-development in particular areas. The strength of this model in the higher education setting is in the level of acceptance on the part of the professor (consultant). Non-directive means just that - the student decides what is personally edifying for her. Hopefully, without external utilitarian direction (from faculty or societal expectations) the student is free to explore things such as the arts or the great books, which might not be held in as high esteem as law, medicine, business, or academic areas.

In higher education students should be allowed to use group investigation models. Students explore their own reactions, they formulate how they might go about accomplishing a task and then after doing it they analyze the accomplishment and generate improvements in going about their subsequent investigations.

Any of these strategies minimizes the professor's initiator role, and as such, increases the chance for more meaningful learning. Such strategies place the instructor in the role of consultant rather than teacher.

> teach 1:to cause to know a subject 2:to show how 3:to guide the studies of 4:to make to know the disagreeable consequences of an action 5:to impart knowledge
>
> (The Merrian-Webster Dictionary, 1974, p. 700.)

We in higher education need to ask ourselves if we really want teachers to be "causing (students) to know a subject." If we do, that implies that the knowing begins and ends with the teacher. We need to question whether we want the teacher "to show how" for that implies that the student must copy the one way of doing things that was modeled. More appropriately, in higher education, we should want the professor to guide the studies of the student. Too often, however, this role seems to fall to a much-too-overworked faculty advisor. We do need to question whether we want the teacher to impart knowledge - it can be done so efficiently through the media (videotapes, audiotapes, or books), leaving the professor free for observing and interacting with the students to that "imparted knowledge."

It would be difficult to ascertain which came first in higher education - student expectation of teacher-led learning or professorial assumption of the "role." Whatever the reasons for the student's unwillingness to direct his own learning and the conceptual block that the college professor should be directing the learning rather than being a partner in it, the mediocrity we see in student endeavors will continue until the student, as client, has some sense of academic direction spawned by something other than the motivation of "I want a job." This euphemism is nothing more than a mandate of functional citizenship - to have a job - be a productive citizen. If the student chooses this as his only motivator, she will then be replaying high school. Mediocrity in the role teachers could play will continue until the professors realize that their adoption of the lecture format, facilitating that easy receptor role, is encouraging the lame student efforts that they would prefer to expel. Until professors begin to turn some of the learning, if not the great majority, over to a student's own direction, students will continue with the habits established in their compulsory K-12 experience. I contend that these insufficiencies in higher education today exist not because the high school in America has looked too much to the elementary school for its direction, rather than, as Mr. Clark would have it, to the university. It is not because the high school has a "bias against excellence in preparing students for higher education."[5] Both the high school and university pursue excellence. They differ in their mission and in their clientele. The recipients of compulsory education are the customer, taking whatever the market produces. The clients (students in higher education) contract for services. One grievious error in Mr. Clark's argument of the high school looking to the elementary school for its role, I might accuse higher education of looking to compulsory education and mislabeling the nature of its clients - treating them like consumers of whatever wares the university is peddling. The university has no mandate to accept all those who apply. Universities can choose their clients. If their clients have not been up-to-snuff then the university has made some mistakes in its choices.

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[5] Clark, Burton R. (1985)

With no intent to fan a long-ago interred fire - the controversial liberal arts education of the Great Books[6] - I would like to share with the reader some of the judgments this humanist educator was making about higher education just after the depression in this country. Although Robert Hutchins would oust anyone not at a university for enhancement of the intellect, and although he felt that the enrollment in colleges should not be so democratic as to admit anyone, his prognosis of higher education seems as true today as when he first wrote it in 1930.

> "We begin, then, with a notion of progress and end with an anti-intellectualism which denies, in effect, that man is a rational animal. He is an animal and perhaps somewhat more intelligent than most. As such, a man can be trained as the more intelligent animals can be. But the idea that his education should consist of the cultivation of his intellect is, of course, ridiculous. What it must consist of is surveys, more or less detailed, of the modern industrial, technological, financial, political, and social situation so that he can fit into it with a minimum of discomfort to himself and to his fellow men. Thus the modern temper produces that strangest of modern phenomena, an anti-intellectual university."[7]

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[6] Hutchins, Robert Maynard, Great Books, The Foundation of a Liberal Education, Simon and Schuster, New York, 1954

[7] Hutchins, Robert Maynard, Higher Learning in America, The Storrs Lectures delivered at Yale University, Yale University Press, 1936, p. 26-27.

There are people who would say that assigning to higher education the role of being consultant to the client has put the university in exactly the position Robert Hutchins describes above. Those people would say that the client wants job-market oriented coursework and degrees. I would point out that this country right now has in place a diverse enough franchise within higher education to meet the appetite and aspirations of its clients. If universities don't want students who need remedial reading courses they should quit enrolling them. Leave those clients to a more appropriate branch of higher education. College teachers and university professors aren't teaching with their lectures. They're underestimating the autonomy desired by their clients. Nor should they be teaching. Professors should not be the ones causing students to know. Students should be causing themselves to know through arduous studies and applications of those studies.

STUDENT CHEATING: WHAT IS A FACULTY MEMBER'S ROLE AND RESPONSIBILITY?

Robert T. Tauber
The Pennsylvania State University

Cheating continues to be a recognized problem in universities (1, 3, 6, 8). Faculty senates, student governments, institution publications, and course syllabi all address the topic. But, just what constitutes cheating? The standing legal advice to university conduct standards' offices is not to produce documents that attempt to delineate each and every posssible example of cheating. Instead, they are counseled to create and enforce more broad, encompassing statements on cheating (9). Faculty, all acting as individual agents of the university, need more direction than this if they are to administer cheating policies.

CHEATING SITUATION "QUIZ"

Are individual faculty able to recognize examples of cheating? Is there agreement among faculty as to what is cheating? Are students able to recognize examples of cheating and is there general agreement among them? Is there any agreement among faculty and students as to what constitutes cheating? Is cheating simply cheating, or does it exist in categories of "seriousness"?

These questions were addressed via an anonymous cheating situation "quiz" completed by 187 students (10% of student body) and 43 faculty (41% of faculty) from The Behrend College of Penn State. Participants were given ten cheating situations to which they responded either "Yes or "No" as to whether each was an example of cheating. The complete situation "quiz" is included at the end of this paper. A typical situation was, "A student prepares a crib sheet and takes it into the test site, but due to the test being proctored so closely, does not actually get a chance to use it. Has he cheated?" The results of the "quiz" are shown below in Graph 1, "WHAT QUALIFIES AS CHEATING? STUDENT VS. FACULTY VIEWS." Faculty and students basically agreed upon what did and did not constitute cheating -- at least for the ten situations posed to them. Of note, is the fact that in situations three through ten, students more often than faculty, answered "Yes." This suggests that students take at least as strong, if not stronger, stand on cheating as do faculty.

See Graph 1

The importance of relying upon "matters of fact" in a faculty member's accusation of cheating is supported as one examines responses to situations #4 and #6. The facts, as would be available to an observer (an instructor), are the same if not identical; a student is seen "looking across" or "glancing over" at a fellow student's answer sheet. Yet, 25% more students and 10% more faculty answered "Yes" to situation #4 than to situation #6. Apparently, although the facts are almost identical, a student's motivation is taken into consideration. But, since motivation is an internally aroused energy, it is impossible to directly observe. Should faculty accusations of cheating be based solely upon the observed facts of the case, or should faculty assumptions about a student's motivation also be considered? This question is addressed below.

Having faculty and students respond to cheating situations, although interesting, overlooks the fact that ten situations represent only a fraction of the possible number that exist. A more useful way to measure faculty and student response to cheating is to identify several general cheating categories into which all possible situations could fit. Cheating can be pigeon-holed into at least three categories: INTENT, INTENT PLUS COMMISSION, and COMMISSION WITHOUT INTENT.

INTENT refers to making plans of some sort to cheat, perhaps preparing a crib sheet that will be taken into the exam site. Premeditation exists. If the crib sheet is taken to the exam site and at the last moment disposed of before entering the exam room (for whatever reason), is this cheating? If the crib sheet is taken into the exam room but never used (perhaps due to close faculty monitoring of the test site, a twinge of conscience, etc.), is this cheating? If the crib sheet is not used, but for some reason comes to the attention of the instructor (someone stumbles over the student's books and out pops the cheat sheet), is this cheating? From Deans, to faculty members, to student personnel workers, to students -- all at one institution, the answer to this question varies. Some say emphatically, "Yes"; others say just as emphatically, "No."

INTENT PLUS COMMISSION refers to preparing to cheat and then actually executing that intent. Preparing the crib sheet referred to above and actually using it would fall into this category. Preparing a paper where one plagiarized and then actually submitting it would also qualify as an example. There is much more universal agreement by those in the university community that this constitutes cheating.

COMMISSION WITHOUT INTENT, refers to such behaviors as being in a test site and, without any premeditation (for example, having selected one's seat next to a fellow student and having worked out some code to pass information back and forth, etc.) glancing over at a neighbor's answer sheet. This is almost a situation of impulse; it is spontaneous. The student did not intend to cheat, but opportunity knocked so loudly he could not resist. Representatives from the university community, although not condoning this type of cheating, are quick to point out the care that should be taken prior to making any cheating accusation. A professor should note repeated student glances at a fellow student's paper (certainly more than one) before making the accusation (9). Just how many is "repeated"? Should individual instructors make the decision? In situations where hundreds of students are crowded into a test-site, elbow to elbow, one wonders if the institution is not guilty of abetting cheating. To what degree should an institution be responsible for guaranteeing proper test-site conditions before students might be accused?

SERIOUSNESS OF CHEATING

How do faculty and students evaluate the seriousness of each of these three cheating categories? In a continuation of the cheating situation "quiz" (questions 11-13) referred to above, faculty and students were asked to rate each of the three categories of cheating on a scale of one through five; one being "Not an example of cheating," and five being "Serious example of cheating." The results are shown in Graph 2, "SERIOUSNESS OF CHEATING STUDENT VS. FACULTY VIEWS."

Faculty and students see INTENT as just barely an example of cheating while they see INTENT PLUS COMMISSION as a serious example of cheating. The only real disparity is for COMMISSION WITHOUT INTENT. On the 1 - 5 scale, students rate this last category, on average, as 3.85, whereas faculty only rate it 1.75. As was the case earlier with the ten cheating situations, we again see students being more harsh than faculty in their evaluation of cheating.

See Graph 2

UNANSWERED QUESTIONS

Although the results from the cheating situation "quiz" show many similarities as well as a few differences between faculty and student perceptions of cheating, one should keep in mind that the results may not hold for any specific faculty member or student. The implications of this fact surface as many unanswered questions.

Should faculty have the right, or have thrust upon them the responsibility, to decide whether or not students have cheated? Can they be an accuser and non-biased judge at the same time (10)? Should they be? Is cheating more correctly classified as disciplinary misconduct or is it an academic evaluation (5)? If it is disciplinary misconduct, much like drinking, drugs, and vandalism, should individual faculty make the determination? If it is disciplinary misconduct, what unique contribution does an professor's academic expertise make to deciding such matters of fact? Some say "everything," some say "nothing." What due process rights exist for students under a disciplinary micsonduct or academic evaluation classification. The answer ranges from at least some, to next to none, respectively (7).

Are individual faculty, operating throughout an institution from their own frame of reference, susceptible to accusations that their responses to student cheating are unreasonable, arbitrary or possibly capricious? If so, may courts intervene? They sure may. What should be the punishment if a student is found guilty of cheating? Who should decide? Should the punishment fit the crime? Most say "Yes," but the problem is that different faculty see the crime differently. Some faculty assign harsh punishments, including an "F" in the course, for any cheating at all. Their rationale, "Cheating is cheating." Others, assign harsh punishments for cheating on major exams and less harsh punishments for cheating on quizzes (2). Do faculty separate academic performance from disciplinary action? What advice do the courts offer (4)?

SUMMARY

On one hand the cheating situation "quiz" generated results that show, collectively, faculty and students react to cheating situations in a smiliar manner and, generally classify the seriousness of cheating in a like fashion. Although such group findings are comforting, they may or may not apply to individual faculty and students -- the basis for most cheating accusations and attempted resolutions (11). Clearly, continued attention needs to be directed to investigating cheating, including what it is, what causes it, what responsibility faculty (as individuals and as agents of an institution) and students have, and what preventative measures are effective.

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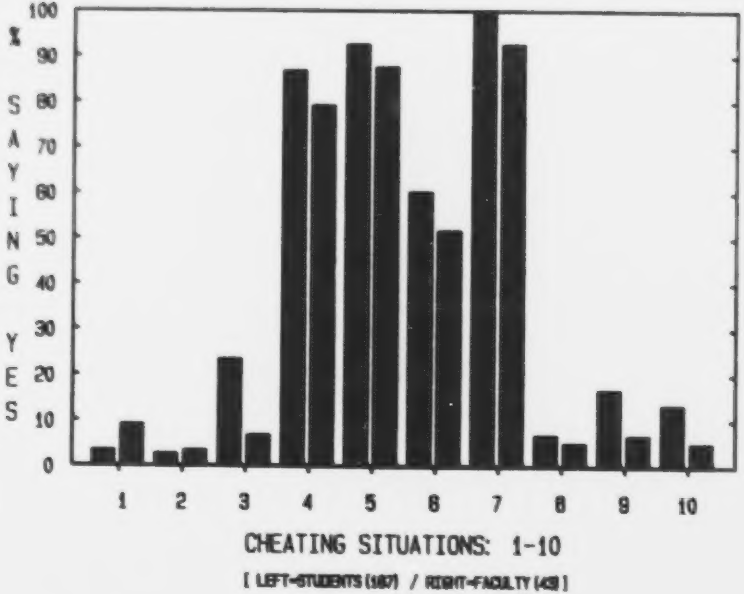
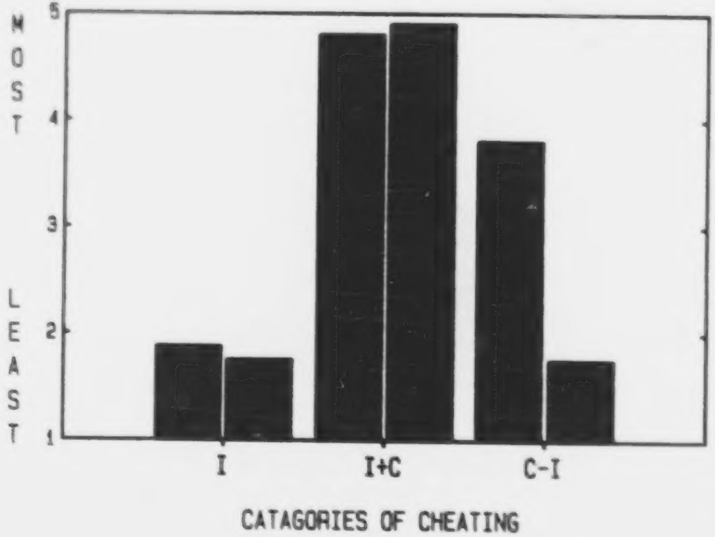
-GRAPH 1-

WHAT QUALIFIES AS CHEATING?
STUDENT VS. FACULTY VIEWS



-GRAPH 2-
SERIOUSNESS OF CHEATING
STUDENT VS. FACULTY VIEWS



I=INTENT
I+C=INTENT PLUS COMMISSION
C-I=COMMISSION WITHOUT INTENT
[LEFT=STUDENTS (187) / RIGHT=FACULTY (43)]

CHEATING "QUIZ"

Please read each of the following situations and answer "YES" or "NO" as to whether it is, in your mind, an example of cheating. Answer them in sequence, 1 through 13. Treat each question as a separate situation.

___ 1. A student sits in his dorm room and prepares a "crib sheet" with the intent of taking the sheet into the test site and using it if he gets the chance. At this point, has he cheated?

___ 2. A student prepares the "crib sheet," as described above, but before entering the test site decides to toss the sheet in the garbage. Has he cheated?

___ 3. A student makes elaborate plans to sit next to a particular student in class in order to copy the student's answers. Has he cheated?

___ 4. A student makes elaborate plans to sit next to a particular student in class in order to copy the student's answers. As the test proceeds the student making the elaborate plans is seen only one (1) time looking across at the other student's answer sheet. Has he cheated?

___ 5. A student makes the same elaborate plans as shown in #4, and is seen repeatedly looking across at the other student's answer sheet. Has he cheated?

___ 6. During an exam, in a rather crowded test site, a student glances over at a fellow student's answer sheet. Has he cheated?

___ 7. A student prepares a "crib sheet" (as described in #1 above) and takes it into the test site and uses it. Has he cheated?

___ 8. A student prepares a "crib sheet" (as described in #1 above), takes it into the test site, but due to a twinge of conscience does not actually us it. Has he cheated?

____ 9. A student prepares a "crib sheet" (as described in #1 above), takes it into the test site, but due to the test being proctored so closely, does not actually get a chance to use it. Has he cheated?

____ 10. A student prepares "crib sheet" (as described in #1 above), takes it into the test site but does not use it. A fellow student walks across an aisle where the student is sitting, trips over his books and '''exposes''' the "crib sheet" to the instructor's attention. Has the student who prepared the "crib sheet" cheated?

There are typically 3 categories associated with the topic cheating --

(INTENT) - student who prepares a "crib sheet."

(INTENT plus COMMISSION) - student who prepares a "crib sheet" and actually uses it.

(COMMISSION without INTENT) - student who just takes advantage of an opportunity to look over at a fellow student's paper.

____ 11. On a scale of '1' through '5', with '1' being, "Not an example of cheating" and '5' being, "Serious example of cheating," what number would you assign to (INTENT)?

____ 12. On a scale of '1' through '5', with '1' being, "not an example of cheating" and '5' being, "Serious example of cheating," what number would you assign (INTENT plus COMMISSION)?

____ 13. On a scale of '1' through '5', with '1' being, "Not an example of cheating" and '5' being, "Serious example of cheating," what number would you assign (COMMISSION without INTENT)?

TAKING THE PULSE OF THE ACADEMIC PROFESSIONAL

WEDNESDAY, 16 JULY

1100 - 1230

TAKING THE PULSE OF THE PROFESSORIATE: LOOKING FOR SYMPTOMS

Barbara J. Millis
Patricia M. Wallace
The University of Maryland Asian Division

A CRITIQUE OF HIGHER EDUCATION

Higher education in the United States has come under serious criticism in recent years.* A report by the National Institute of Education, Involvement in Learning: Realizing the Potential of American Higher Education, cites among a long list of "warning signals": declines in student achievement, narrow specialization in undergraduate programs and degrees, salary inequities for faculty, dwindling financial resources, and lowered academic standards (1984, p. 8-14). Another recent study, Integrity in the College Curriculum: A Report to the Academic Community, sponsored by the Association of American Colleges, likewise gives extensive evidence of "decline and devaluation" (1985, p. 1-8). Virtually all studies recognize the importance of faculty in revitalizing all aspects of higher education.

*Such criticism is not limited to the United States. The governmental Ad Hoc Council on Education in Japan has made controversial recommendations about educational reform, citing the need to improve the quality of teachers, to upgrade higher education, and to open the opportunities for higher education to more adults.

The authors would like to thank Charleen Thunberg for statistical and clerical support in the production of this paper.

Two important new studies, focusing solely on faculty, paint a bleak and disturbing picture of the professoriate. A Carnegie Foundation survey of 5,000 faculty members at 310 institutions points to a faculty which is "deeply troubled . . . [and] concerned about their current status and prospects for the future" (1985, p.31). A second major study, due for publication in mid-1986, with the tentative title of The Intellectual Enterprise: Academic Life in America, was based on interviews with 170 faculty members in six areas of study at sixteen institutions. Its author Burton R. Clark, concludes that an "inherently and ever-more fragmented professoriate" can, however, find integration "not from commonness, but from overlapping connections among [their] differences" (1985, pp. 36-43). Critics claim that institutions, to remain healthy, must monitor the collective pulse of their faculties. Robert T. Blackburn and Janet Lawrence argue convincingly that "close attention to the condition of the professoriate will help higher education institutions to maintain educational vitality by employing human resources effectively" (1984, p.85).

AN ASIAN DIVISION FACULTY SURVEY

The University of Maryland Asian Division, which offers undergraduate courses leading to BS and BA degrees, has about 7,000 enrollments per eight-week term at 52 U.S. military installations in eight Asian countries and dependencies. About three hundred faculty, many physically isolated from colleagues, teach in this program.

For years, The University of Maryland Asian Division has maintained an active faculty development program with remarkably high participation rates (Millis, 1985). Ongoing student evaluations consistently indicate that faculty are performing at above-average standards. Nonetheless, the recent surveys of Stateside faculty and the spirit of self-evaluation marking the Asian Division's thirtieth anniversary and an upcoming accreditation visit prompted us to examine the responses from our own surveys to determine whether serious problems in faculty morale were evident. Ideally, we hoped to see if any erosions had occurred during the past several years.

The questionnaire created by Dr. Donald Baron was originally developed to assess classroom practices and to determine professional growth goals. Three critical sections, moreover, dealt with faculty perceptions of students, administrators, and fellow faculty members. The survey was distributed to all faculty in 1981 and again in 1985; 103 responses were received in 1981, and 123 in 1985. The respondents in each sample represented over 20 disciplines and also included both part-time (adjunct) and full-time (core) lecturers. The results from the survey items dealing with the respondents' perceptions of colleagues, students and administrators are shown in Table 1.

The data in both studies indicate that lecturers, both core and adjunct, teaching for The University of Maryland Asian Division have positive perceptions of their colleagues, students, and the administration. They do not seem to feel the "'worrisome' evidence of disaffection" noted of the Carnegie Survey (Jacobsen, 1985, p. 24). Nonetheless, we suspected that national trends would be evident if we took a closer look at our professoriate.

AN ASSESSMENT

In general Asian Division faculty tend to view their colleagues favorably; this perception seems to have remained constant over the four-year period. Comments such as "very high level of professionalism," "remarkable people who make a difficult system work," and "the best instructional faculty I have ever been associated with" reinforce the raw statistics. Other remarks, however, indicate that some adjunct faculty, like their counterparts in the United States, feel isolated and "unconnected." Several respondents indicated that they had little contact with other faculty; one individual said, "Need more cross flow for the single 'part-time' teacher. Trying to build a class from scratch two weeks prior without support materials is a problem."

Faculty perceptions about students also remained fairly positive and constant. Two problem areas appeared in both surveys. Only about one third of the respondents agreed that students were "well counseled about prerequisites and proper course sequencing." Also, over 80% of the faculty in 1981 and 1985 agreed that students "often need work on basic writing and/or mathematics skills."

Faculty perceptions of administrators were generally positive, with over 80% in both surveys "agreeing" or "strongly agreeing" that the administrators with whom they had contact were "supportive of faculty attempts to improve teaching" and "generally concerned about the overall quality of the University's overseas program."

There were no significant differences between the responses obtained in 1981 and those from the 1985 sample, suggesting that no major changes in the attitudes of the faculty toward their students, colleagues, or administrators, have occurred over the past several years.

A CLOSER LOOK

Because of both nationwide and international concerns regarding faculty discontent, we took a closer look at our 1985 sample of faculty respondents. Although our sample sizes were small compared to the Stateside surveys, we thought it would be heuristically useful to examine the data to determine whether they contained trends that might support and replicate the findings of those larger surveys in a very different context. We choose three major factors that appeared to be associated with faculty morale based on previous studies: the faculty member's teaching discipline (humanities vs. vocationally-oriented subjects), the faculty member's pay scale, and the faculty member's length of service.

Virtually everyone associated with higher education is aware of the recent shifts away from the humanities and toward vocationalism. A recent American Association for Higher Education Bulletin indicates that "shifts in fields of study" is a major trend now in United States higher education. This study noted: "A review of trends in the earned degrees by field awarded by public universities in Illinois showed that in just ten years, from 1972 to 1982, the number of degrees awarded in communications increased by 50%, in business by 75%, in engineering by 100%, and in computer science by 500%. Over the same period, degrees awarded in education, foreign languages, and letters decreased by 60%" (Frances, 1985, p.4).

To determine whether faculty morale differed between lecturers teaching humanities and those teaching more vocationally-oriented subjects, we compared the responses of English and business faculty. In general, the business faculty (n=23) tended to perceive administrators and students more favorably. The English faculty (n=23), however, held higher opinions of Asian Division faculty than did their counterparts in business. (Chi square tests revealed significant differences on items 5 and 13 at the .05 level, and the differences on items 3 10, and 12 approached significance <p <.1>).

In 1985, the Schuster/Brown survey team had interviewed faculty who "often expressed outrage about market-driven compensation --

differential pay policies they considered unjust, even humiliating" (p.19). Although our survey did not ask respondents to identify their pay scale, the Asian Division's general practice is to pay individiuals teaching business or computer-related courses on a higher scale. We compared the responses of people teaching in these two disciplines to all other respondents, and found similar, though statistically not significant, trends on several of the items. Faculty who teach in business or computer-related fields tend to perceive their students and their administrators more positively.

The Carnegie Survey also identified length of service as a third variable that may be associated with faculty morale. Their results indicated that "approximately 40% of all faculty members surveyed say they are less enthusiastic about their work now than when they began their academic careers, and that morale in their departments is worse today than five years ago" (1985, p. 32). We tested this hypothesis in our 1985 sample by comparing the responses of faculty members who have taught five or less courses in the Asian Division, to those who taught more than five. Again, the trends were similar (though statistically not significant for any single item). Those new to the program tended to be somewhat more positive about faculty colleagues, students and administrators.

In our program, as in many in Stateside institutions of higher education, the three variables we examined are highly correlated. Newer faculty are more likely to be in the higher-paying, vocationally-oriented disciplines such as business or computer studies because those are the areas that are expanding. Our sample size was too small to determine the effects of each variable individually by using control variables.

CONCLUSION

Overall, the Asian Division faculty surveys taken in both 1981 and 1985 show a relatively healthy professoriate, one feeling positive about their colleagues, their students and their administrators. Nonetheless, there is no room for complacency. The surveys show many of the same trends seen in the United States and other countries. Faculty express concern about the academic levels and motivations of their students, who are perceived as not being well-counseled about prerequisites and often needing work in basic writing and math skills. Our surveys also show some of the same trends uncovered by the Carnegie Survey and other studies with regard to the factors associated with faculty morale. Faculty in different disciplines, at different salary levels, and with different amounts of service to the institution report somewhat different perceptions of their students, their colleagues, and their administrators. The issues raised by these two surveys and many others related to higher education will be discussed at a faculty-administrative convocation held in conjunction with The University of Maryland University College Asian Division's thirtieth commencement.

TABLE 1

FACULTY SURVEY*

The University of Maryland
Asian Division

	81/85(%) Strongly Agree/ Agree	81/85(%) Not Sure	81/85(%) Strongly Disagree/ Disagree	81/85(%) NA
COLLEAGUES				
Are genuinely interested in student academic progress	87/83	8/13	1/ 1	3/ 2
Are genuinely interested in student well-being	80/78	14/17	2/ 3	5/ 2
Are interested in improving their teaching	76/77	18/17	2/ 2	4/ 3
STUDENTS				
Well counseled about prerequisites and proper course sequencing	39/34	26/35	34/29	1/ 2
Seriously interested in academic learning	78/79	15/13	7/ 5	1/ 4
Willing to work hard in courses	77/81	16/11	8/ 6	0/ 2
Appreciative of good teaching	93/93	4/ 7	1/ 1	2/ 0
Generally well prepared when they enter your classroom	51/58	23/18	24/21	2/ 3
Excessively concerned with grades to the point of pressuring you	32/28	20/15	48/55	0/ 2
Often need work in basic writing and/or mathematics skills	82/83	6/ 7	11/ 9	2/ 1
ADMINISTRATORS				
Supportive of faculty attempts to improve teaching	83/87	14/ 7	4/ 4	0/ 2
Genuinely concerned about the overall well-being of the faculty	78/69	16/16	6/11	1/ 5
Genuinely concerned about the overall quality of the university's overseas program	88/85	9/ 7	3/ 5	0/ 3

*The following items were taken from a larger survey distributed to all University of Maryland Asian Division faculty in 1981, and again in 1985.

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PART-TIME FACULTY: A PROGRAM FOR MANAGING A CRITICAL ISSUE

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The Pennsylvania State University
The Ogontz Campus

It is very clear from the most recent figures reported by the National Center for Education Statistics that the use of part-time instructors in higher education has reached critical, if not scandalous, levels. Close to forty percent of the total teaching force now consists of part-timers, faculty members who are hired on a temporary basis to teach a course or two during a given semester or else faculty who may be hired to teach courses for a very limited contract period. (These figures do not include graduate assistants.)

To understand the extent of the problem, one need only to examine the NCES figures a bit more closely. The NCES reports that during the late 1970's and early 1980's the number of part-time faculty members grew by more than fifty percent. By contrast, the number of full-time faculty members grew by just a bit over ten percent. The latest NCES statistics indicate that almost fifty-five percent of faculty at two-year institutions are part-time, that more than twenty-five percent of faculty at exclusively liberal arts institutions are part-time, and that over twenty percent of faculty at major research universities are part-time.

These figures, as recent as they are, do not reflect the part-time situation in 1986. Estimates of the number of part-timers currently toiling in higher education suggest that more temporaries than ever are manning classes in the realm of academe.

While acknowledging the varied and complex nature of the part-time faculty phenomenon, the administration at the Ogontz Campus of The Pennsylvania State Unviersity has put in place a program to address the major issues associated with wide use of temporary instructors. The Campus is no different from many other medium-sized institutions with an enrollment of about 2,500 resident instruction students. For instance, during Fall Semester, 1985, fourteen of twenty-six English faculty were part-time and ten of fifteen mathematics faculty were part-time. Because of these high numbers, the Campus administration decided that action had to be taken to deal rationally and intelligently with the part-time issue.

The problems at Penn State's Ogontz Campus have been the same as at other institutions. These problems have traditionally focused on the following crucial concerns: economic welfare, academic quality and standards, and rights and responsibilities as faculty members.

In most institutions, part-time faculty report that they are low paid, have little or no academic orientation and supervision, are not included in departmental meetings or decisions, often have no office space, receive minimal clerical support, are frequently hired at the last minute, and are usually offered the least attractive teaching schedules.

Because part-time faculty in the Philadelphia area--where Penn State's Ogontz Campus is located--are paid anywhere from $900 to $2,000 without fringe benefits to teach a three-credit course, with the average being about $1,200, part-time faculty often are forced to teach a workload that is far greater than the accepted load for full-time faculty. This heavy load frequently diminishes the part-timers ability to become rigorously involved in pedagogical exploration and academic research, thus preventing them from doing more than a routine job in the classroom. Lack of time and office space also limits the part-timers contact with students outside the classroom. Coupled with little or no academic orientation and supervision, these problems usually leave part-timers in a kind of academic limbo. At best, they lead a marginal existence.

In a recent white paper, the American Association of University Professors has recommended that institutions of higher learning take the following steps to address the concerns of part-time faculty members:

- creation of a special tenure category for part-time faculty who are used on a regular basis,
- appointment of part-time faculty as much in advance of the beginning of the semester as possible,
- payment for course preparation by part-time faculty when a class is canceled,
- better supervision of part-time faculty in order that academic standards be maintained,
- inclusion, when appropriate, of part-time faculty in departmental discussions and decisions, curriculum planning, and development of institutional goals,
- adoption of adequate pay scales for part-time faculty and the payment of certain fringe benefits,
- orientation of part-time faculty when they are first hired,
- access of part-time faculty to all institutional support services,
- provision of adequate office space for part-time faculty, and
- effective evaluation of the classroom performance of part-time faculty.

Obviously, the administrators at the Ogontz Campus cannot unilaterally put into operation all at once a program to solve all the problems associated with use of part-time faculty. However, the Academic Affairs Office has decided to take certain steps to improve the conditions of part-timers. During the past two years, the Director of Academic Affairs instituted the following procedures for all part-time faculty members:

- pre-hiring interview of specified length by a member of the appropriate discipline and/or by the Assistant Director of Academic Affairs,
- assignment of a full-time mentor from the appropriate discipline to orient and to assist with any academic questions,
- inclusion in all departmental meetings and discussions,
- assignment to adequate office space with access to all instructional support services,
- notification as early as possible regarding course schedules, and
- appropriate evaluation procedures of teaching performance.

Although the Campus does not have complete control over compensation for part-time faculty, salaries have been increased recently to close to $1,400 per three-credit course. Too, a program has been launched to create a number of full-time fixed term non-tenure track positions with adequate compensation for part-timers. These contracts would also include the fringe benefits available for full-time faculty. In addition, an annual forum has been initiated that brings together part-time faculty and other Campus personnel--administrative, academic, support staff--to discuss common concerns.

The result of the introduction of these measures--based in part on AAUP recommendations--has been exceptionally positive. Turnover of part-time personnel has decreased drastically as these faculty members have become more integrated with full-time faculty and more involved with Campus and departmental activities.

In fact, a recent survey of part-time faculty members at the Ogontz Campus indicates that on the whole they are much more satisfied with conditions at Penn State than they are with conditions they have experienced at other institutions. Over fifty percent of those faculty returning the survey rated Penn State conditions better than those at comparable venues; only ten percent indicated dissatisfaction. Comments included the following: "I have a very positive feeling toward the program," "Overall, the program is excellent," "I have nothing but praise for support offered by administration, [faculty, and] staff," "You do a great job making [the part-time] faculty feel comfortable and valued. This is a wonderful place to teach."

The operable term is valued. The program now in place at the Ogontz Campus seeks as its prime goal to integrate part-time faculty as fully into the Campus operation as possible, to reward them to the fullest extent possible, and to make them feel valued. Of course, there is still room for improvement. Compensation for part-timers needs to be increased. More fixed-term contracts including benefits need to be established. The use of periodic forums for the exchange of ideas between part-timers and full-time faculty and administrators need to be continued and expanded.

It is the strong view of the Ogontz Campus administration that part-time faculty should not be hired to replace full-time faculty, but should be used sparingly to allow an institution to maintain economic and academic flexibility. It is imperative, however, and it is the thrust of the Penn State program, that those part-timers who are hired be accorded just compensation, essential support services, and the protection of academic freedom.

The bottom line, of course, is that part-time faculty who feel valued and reasonably secure will provide quality instruction. For the forseeable future, part-timers will be an important component of higher education institutions. These faculty members need to be encouraged to give their best to the many students who will engage with them in the quest for knowledge. Thus, secure and valued part-time faculty will enhance the mission of the university, not detract from it. The program established at Penn State's Ogontz Campus is a definite move in this direction.

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PROFESSIONALS TURNED PROFESSORS:
PREDICTING TRANSITION SUCCESS IN THREE CASE STUDIES

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Every administrator of an academic unit committed to pre-professional or professional education knows precisely how dubious is Mr. Shaw's wisdom: the fact is that many of our best teachers are perfectly capable of doing what they teach. We would not want them in our ranks, were matters otherwise.

This is particularly true in departments and schools of communication. There, the muscle stretched in the classroom is virtually identical to that exercised in pursuit of the profession. Communicating to students how one does a thing is not so very different from directing staff as a magazine editor, a television studio producer, a film or theatre director as to how one wants things done.

Moreover, in our attempts to keep the professional foundations of our curricula *au courrant*, we often introduce working professionals as adjunct faculty. This has been fairly successful in my experience, insofar as their ability to teach what they know is concerned, thanks largely to that "shared muscle."

However, such part-time teachers do come and go: while most are highly motivated to teach because of the natural loquacity of many communication professionals, they sometimes come to regard teaching as a charity work, given the stipends we can afford to pay them. Then too, they find it difficult to squeeze teaching into a professional life, especially once they realize how exhausting classroom performance can be, and how much time must be committed to preparation and grading.

The resultant adjunct turnover does provide the desired constant renewal of ideas and of staff energies, but with this comes inevitable instability.

Having no permanent professional staff also creates extraordinary difficulties in developing one's professional program, since one can hardly ask poorly paid adjuncts to put in long hours in committee work. A few fulltime permanent professional faculty seem essential for that reason alone.

Finally, consider the headaches extensive reliance upon adjuncts creates for the adminstrator who must spend an inordinate amount of time in a continuing round of part-time faculty recruitment.

Consequently, every administrator dreams of turning up one or two professionals who will choose to enter academe as the next, or indeed final phase of a career already marked by professional success. The desire for some stability is joined by the desire for the recruitment *cachet* such faculty can bring to our advertising brochures.

Unfortunately, we sometimes blind ourselves to the kind of "fit" they may make within our departments or schools, and it is only after a series of unhappy experiences that we may come to understand just how valid is the obverse of Mr. Shaw's famous remark: *Those who can, can't necessarily teach.*

This certainly holds true if we accept that the university teaching life entails a great deal more than performing effectively in a classroom; the three case studies I offer here, drawn from my own experience as chair of communication departments in two institutions (U.S. & Canadian) are based upon that premise.

While I cannot claim to offer absolute predictors of the likelihood of a professional finding success in academe, the four conclusions reached here do provide broad rules of thumb which may be of some use in deciding whether or not to employ a given professional.

Perhaps more important is that I provoke a response from readers in fields such as law, medicine and business which also employ professionals: do my experiences stir echoes of their own, and have they arrived at substantially the same or significantly different conclusions? I would also like to initiate a dialogue with my counterparts in communication education regarding their experiences, in hopes that we might begin to establish better predictors of a professional-turned-professor's likely success in making such a major transition.[1]

A spent five years as first advertising, then news director of a television network affiliate before coming to us; 32 years old, he[2] had an MA in Renaissance drama, and was ABD for an English literature doctorate. *A* was appointed as a lecturer and taught primarily broadcast production, as well as some film and broadcast history.

B worked as a freelance publicist, weekly newspaper columnist and briefly as a daily newspaper reporter before coming to us. Just over 40, he held a Master's from one of the country's two oldest journalism schools. *B* began as an all-purpose journalism and public relations instructor, but eventually began to move with market demands and curricular reforms into primarily a public relations and advertising role.

C came to us at 55, after 35 years in print news; his last assignment was as metropolitan editor of a major U.S. newspaper. Appointed as an assistant professor in light of exceptional professional experience, *C* held a Master's from the other great American journalism school; he initially taught journalism history and mass communication theory as well as news reporting.

There are three principal areas to which such professionals must adjust: remuneration expectations; teaching demands; and collegial life. We shall examine each of these in turn.

The size of the salary cut a professional must take in order to teach should offer some kind of index as to his likely success in adjusting to academe, but even a cursory examination of the circumstances of these three offers contradictory evidence.

A took a considerable cut in income to join our faculty, a greater cut than *B* and at least as much as *C*, despite *C*'s much longer professional life and much more exalted position.[3] *A* did do some freelance work to supplement income, but dedicated so much time to university affairs as to leave little for outside employment.

B and *C* were not dependent upon their teaching salaries, having other sources of income as well as reasonably profitable freelance work; *C* also enjoys income as an adjunct at his *alma mater*.

Every professional I have employed acknowledges at the outset that colleges cannot match industry wages; yet both *B* and *C* complained incessantly of what they regarded as inadequate remuneration.

C always argued from the point of view of personal worth; *B* always argued *ad hominem*, having found out what *C* was paid (through the simple expedient of asking him). Neither considered faculty collective bargaining relevant to them.

A never once complained about salary, despite a greater dependence upon it, and despite the fact that his salary was the smallest of the three. He accepted collective bargaining as the sole recourse to improving his own lot.

Hence, while it was *A* who left us for a job as station operations director at another network affiliate, trebling salary in the move, money was not really a prime factor, as his letter of resignation clearly indicated.

C is still with us, but he has never accepted the economic realities of the university: frankly, we have been doing the adjusting, first through paying him a much higher base salary than his rank warrants (including two raises, negotiated individually). In addition, we structure teaching assignments so he can more easily do freelance work, and teach elsewhere as an adjunct. Moreover, he is earning three times the stipend his predecessor received as student newspaper advisor. Given a buy-out from his previous employer and agood pension, *C* is easily earning more today than he earned working fulltime as a professional.

Salary expectations are therefore only a partially useful predictor. We lost the only one of the three who had adjusted expectations; we lost another in part because *B*'s case simply did not merit the "heroic" retention measures we were prepared to take for *C*; we retained *C* only because of those measures.

Adjustments to teaching are of three kinds: classroom performance, expectations of students and acceptance of workload.

I shall not go into any detail on the first of these; all three instructors performed well in the classroom, based upon peer observation and student evaluations. As suggested above, one expects this of faculty in the communications field; it is in the last two areas where problems can be expected.

A's single greatest adjustment lay in the first of these: he demanded a degree of professionalism in the studio which students were not prepared to deliver. He simply had to learn patience, without denigrating standards; this he did over the first two years with us.

C also was nonplussed by student limitations, as seen in his news reporting classes: he expected to teach reportorial and editorial techniques, and was appalled to discover the limited literacy of university students these days. To his credit, the news reporting class has become a mainstay of guaranteeing our graduates have achieved at least this minimum of literacy, and while his standards have not declined, he has accepted the need to blue-pencil grammar as well as journalistic forms.

B had less difficulty in adjusting to student limitations; yet even though he was apparently not so demanding as the others, students complained heavily about *B*, only rarely about *A* and *C*: they pronounced the latter two "tough but fair," while they found *B* to be arbitrary in grading.

All three managed the adjustment to workload: *A* took it in stride without complaint; *C*, with surprise at the number of hours entailed, but essentially willingly; *B*, with loud protestations. *B* argued again *ad hominem*, claiming that his public relations and journalism history classes were bigger than *C*'s smaller craft courses and so must perforce carry a heavier grading load; *B* could not understand that *C* graded at least two assignments per student a week, so that his assignment-grading chores actually exceeded *B*'s workload. Hence, *B* constantly badgered the chair for a return to teaching news reporting.

While an adjustment on the part of the department was made in *C*'s case, through restricting his teaching to craft courses, this was not done to ease the workload, but rather because it seemed the best possible use to make of him; moreover, this became feasible because we made introductory news reporting a prerequisite for advanced public relations and broadcast news, significantly increasing student demand for the course. That this obviated one of his major complaints was simply a bonus, but nevertheless, as in the case of salary, we were doing the adjusting.

Again, we find a predictor of limited value here: Since all three had done some teaching as adjuncts, this adjustment to workload is one we might have expected them to take in stride; yet while *A* had no complaints, both *B* and *C* expressed surprise.

The question of course assignments brings us to the third and final adjustment of the professional-turned-professor, namely those elements which comprise collegial life: responsibilities to colleagues and to the institution; and acceptance of the political and social realities of life in the university.

A never complained about course assignments, enjoying both the lecture hall and the TV studio. As noted, *C* was relieved of the need to make this accomodation; *B*, however, constantly nagged the chair to provide an assignment load identical to *C*'s. This was not possible first because market demands precluded it, and second because it would have violated the department's planning for *B*'s position.

I have no doubt that changes in *C*'s teaching schedule were instrumental in his retention, and a refusal to so accomodate *B* was a significant factor in his endless discontent.

Their varied responses to the need to accept the realities of the academic marketplace are mirrored in their adjustments to other academic responsibilities. *A*'s was very nearly complete and immediate: he volunteered for the department educational policy committee where he worked most effectively; he made every department, committee and college meeting, put in extra office hours for students, and was both genial and politic in dealing with those members of the department he might deem privately as somewhat fossilized.

B took on such assignments as were offered, and generally performed them well; our valuation of such work was somewhat undercut, however, by its repeated invocation as an argument for special treatment, when we consider such work to be a normal part of the life of the professoriate.

C never sought such assignments; only after being told in no uncertain terms that promotion and merit awards were premised in part upon university and community service, did he begin to take on such work. Those assignments made were cheerfully and efficiently completed; however, he learned somewhere never to volunteer, and to this day does not do so. Moreover, he avoids college meetings whenever possible, and is erratic in attendance at department meetings.

Only with regard to one of the political and social mores of academe did *A* express any reluctance to play by the rules, and we lost him because of this.

The Dean was prepared to accept an M.F.A. in lieu of the doctorate for *A*, but the only program in the area was an "art video" one which would contribute little to his production skills in broadcast and industrial video, the two areas to which our students are drawn.

Nevertheless, *A* probably would have pursued this credential were it not for the fact that two tenured departmental stalwarts were denied promotion to the rank of associate professor by the provost and university rank and tenure committee. Having cleared the hurdles of department, college and dean based upon their professional work and the recent acquisition of Ph.D.'s, these two were denied promotion on the grounds that professional work did not equate to scholarship, despite the clear-cut professional performance criteria approved by our department and the option raised for this in our *Faculty Guide*.[4] Offered a professional job a short time later, *A* felt it safer to take it than to risk similar treatment when tenuring and promotion came up for him in a few years.

C is not on a tenure track, and will retire within five years; nevertheless, he may be promoted shortly to the rank of associate professor. This is possible because the new provost was willing to separate tenure from promotion to the rank of associate professor in this one instance (the university holds the criteria for these to be identical).[5] His age and the fact that tenure is not involved has led to the university's greater flexibility here; in fact, *A*'s youth and possible tenure were initially raised by the dean as arguments for his having to pursue a Ph.D.

Like *C*, *B* sought promotion outside the normal stream of committees, Dean and Provost; unlike *C*, *B* never yielded the point. Moreover, he also demanded release from the obligation to earn a doctorate or any other terminal degree, on the grounds that his professional credentials were the equal of *C's* (a patently silly claim). Noting that *B's* teaching load involved primarily academic courses, the department and Dean insisted on the doctorate, although we did accept a proposed D.Ed. in" writing across the curriculum" as an alternative to the Ph.D. in communication; *B* began D.Ed. studies, but continued to protest.

Were I to have attempted to assess the likelihood of retention at the start of their academic careers, I surely would have bet upon *B* as the one most likely to stay on with us: he had the least economic adjustment to make, had as good formal academic credentials as either of the others, as much adjunct experience, and was not moving from a fulltime professional world into a fulltime academic one.

A, a talented, relatively young professional, would have seemed the least likely to stay since the attractions of better salary and the strictures of academic life would presumably affect him more than they would the much older *B* and *C*.

I would have called *C's* retention something of a toss-up; I had no doubts he would take off should a better offer come from another university or a publication.

Yet it is *C* who has survived, in part because of flexibility and rule-bending on the part of administrators, and in part because of his own willingness to play by the rules once they had been clearly laid down-- simply, *C* has displayed professionalism. He takes orders when whomever he recognizes as the boss lays down the law, and so it is possible to make such compromises as must be made, while holding the line on those points where compromise is impossible.

I might have expected *C* to have been a little less trouble than he has been over the years, but not much: the curmudgeon of the city room is the curmudgeon of the classroom. But then, his value to us lies almost precisely in the exposure to the realities of the cityroom which students receive through him.

Had *B* the same attitude, he would still be with us; but then, he was not as truly professional as were either *A* or *C*.

In the end, we lost the best of the three because we could not guarantee that the University would consistently follow the rules the department tried to establish for such professionals-turned-professors as *A* (namely, recognition of professionalism in lieu of scholarship as grounds for tenure and promotion); we got rid of the worst of the three by a sweeping vote of the tenured faculty, because his constant complaining was not only affecting faculty morale, but also that of students who were frequently subjected to such harangues as he occasionally permitted to spill over into the halls and classroom; we retained *C*, whom I would have to describe as still something of a diamond-in-the-rough, even after nearly four years with us.

These, then, are my own four principal conclusions from these case studies: apparently, the more genuinely professional the potential faculty member, the greater the likelihood that one can shape him or her into an academician; on the other hand, one is least likely to enjoy success with someone like *B*, who seemed to have the least to give up, and the least to unlearn! Third, the longer-- and more recent --the candidate's experience as a student (like the ABD *A*), the more likely the candidate will move happily into the life of the university. Finally, the university must make considerable allowances for professional faculty if it wishes to retain them.

I am not sanguine that I shall ever again find a faculty member as promising at 32 as was *A*, and I fear that should I do so, the university will remain too inflexible to make adequate and reasonable compromises with him or her. And while I do not relish looking for another *C* in five years, I realize fully that departments such as mine need at least a *C* or two, and that they are in the end worth the effort needed to alternatively cajole and coddle them into shape.

Notes

[1] This particular subject— the retention of the working professional who assays a life in academe —has not been thoroughly explored; nor has the question of attracting and retaining professionals as adjunct faculty. Literature searches through not only standard sources such as *The Humanities* and *The Social Sciences Indexes* but also through a data-base search of the *Educational Research Information Center (ERIC)* have yielded scant information on this question.

J. F. B. Footer has written on "The Condition of Temporary Faculty" in *PS* 16, (Summer 1983). See M. Zey-Ferrell, "Predictors of Faculty Intent To Exit the organization: Potential Turnover in a Large University," *Human Relations* 35 (May 1982) for an attempt to predict the likelihood of retention of faculty in general.

R. Bolomon has written two articles, published in *Dance Magazine*, on the vicissitudes of professionals in one field who attempt academic careers: "Dancer Into Administrator: Chairing the Department; or, Life At The Top," 57 (Fall 1983); "College To Career And Back: The New University Teachers," 55 (November 1982).

Advertising Age has published a number of articles directed towards advertising professionals as to the experiences colleagues have had in the university: see W. Weir, "Admen Show Class As Teachers", September 23, 1985; S. Bernstein, "Ad Majors Up, Teachers Down," February 4, 1985; R. Reilly, "Why Does Adman Leave Real World For Academia?", July 30, 1979. See also R. Dries, "Where The Profs Are Sales Pros" in *Sales And Marketing Management*, May 16, 1983.

See Wayne L. Whelan, "The Legal Status of Part-Time Faculty" In *Lifelong Learning: The Adult years*, III-9, May 1980 for a discussion of this crucial aspect of employing such faculty; and Howard P. Tuckman and Jaime Caldwell, "The Reward Structure for Part-Timers in Academe" in *Journal of Higher Education*, 50-6, November-December 1980 for a discussion of a key retention issue.

[2] While I wish to eliminate sex as a basis for discrimination among the three professors in question, I also wish to avoid the infelicities of style which would result from eliminating personal pronouns. Hence, I refer to *A*, *B* and *C* as "he" or "him," but this does not necessarily mean that all three are males.

[3] One must bear in mind the difference between print and broadcast salaries: generally, broadcasting pays better than newspaper work. Had *C* worked for NBC rather than a powerful daily, his pay packet would have been much fatter, so that *A*'s regional broadcasting salary was actually competitive with *C*'s "national-class" print one.

[4] For relevant discussions, see Stephen M. Archer and Patrick Atkinson, "Promotion and Tenure Procedures for Faculty Holding the MFA" in *ACA Bulletin* 50, October 1984, and Herbert J. Walberg, *Evaluating Educational Performance: A Sourcebook of Methods, Instruments, and Examples* (Berkeley, CA: McCutchan, 1974). A somewhat dated view on teacher (rather than scholar) training, see Alexander W. Astin and Calvin B. T. Lee, "Current Practices in the Evaluation and Training of College Teachers" in *Educational Record*, Summer 1966, pp. 361-75.

[5] It is important to note that *C* only entered the traditional promotion lists when he was informed firmly that neither the chairman nor the Dean could "make" him an Associate Professor, and that he would have to pursue promotion through normal channels.

JOB BURNOUT IN COLLEGE PRESIDENTS AND THEIR PERCEPTIONS OF JOB RELATED STRESSORS

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Job burnout is a term that is used to define a variety of conditions that are caused by various stress factors. Dr. Christina Maslach (1982), a University of California, Berkeley pioneer in research on burnout, feels that burnout is a bonafide phenomenon and more studies are needed in order to fully understand its cause and effect. A considerable amount of research has already been completed and more is underway in the area of burnout among professionals in the public service occupations.

California Community College presidents are one group of public service professionals in which job burnout can occur. This group of educators needs to know of this burnout potential and they also need to learn ways to prevent job burnout. This research has assessed the college presidents' perception of job burnout and also assessed their perceptions of job-related stressors. To measure this, two instruments were used: the Oregon School Administrators Stress Survey (OSASS), and the Maslach Burnout Inventory. A correlational and comparative study was conducted to describe college presidents' stressors and levels of burnout, and to determine the relationship between specific stressors (stressful job situations) and burnout.

Stressful work situations are not unique to the community college president. A growing body of evidence points to the conclusion that work conditions are causal factors in physical and mental health problems in many occupations but Marrow (1981) reports that burnout is running through the world of academia like Asian Flu. The burnout syndrome has increased in seriousness because of the physical and emotional stress that exists in the academic profession. If burnout is not checked, it could harm the very people whose goal it is to serve others with greater understanding and insight.

National surveys show heightened interest in research pertaining to tension and anxiety as they relate to stress at work. Increasing pressures on administrators and teachers have led to an increasing awareness of the burnout syndrome in education.

The community college president has a great number of pressures on him. Minzberg (1973) indicates there are pressures of keeping the college away from the syndrome of post-high school (the common expression "thirteenth and fourteenth grades" stems from the acknowledgement of this stressor). There are pressures to accommodate the educational needs of the various age groups in the community. There are the endless pressures of staying strong financially in a period of constantly changing financial legislation. But mainly, the president must deal with the pressures that accompany his efforts to make his community college a comprehensive collegiate institution.

Levinson (1981) states that people suffering burnout generally have identifiable characteristics: chronic fatigue, anger at those making demands, self-criticism, negativism, and irritability, a sense of being beseiged, and a hair-trigger display of emotions. Additionally, other destructive types of behavior may accompany these feelings including inappropriate anger at subordinates and family. Sometimes withdrawal even from those whose support is most needed occurs. Also, efforts to escape the source of pressure through illness, absenteeism, drugs or alcohol can occur.

Research Design

The purpose of this research was to determine the relationship, if any, between job-related stressors and job burnout as perceived by California community college presidents. The study also served to identify the types of stressors these administrators perceive and to determine if stressors are perceived differently among groups based on demographic factors such as personal characteristics and college location.

Presidents of California community colleges were selected as the target population for this study because they represented a group of school administrators who experienced substantial stress in their jobs. All 106 presidents were eligible for inclusion in the study, and an attempt was made to ensure that all respond to the survey.

The 106 presidents were identified by name from the 1982-83 state-wide directory of California colleges. Although several attempts were made to gain the cooperation of all 106 presidents, because of the voluntary nature of participation in the study, 76 presidents actually responded for a return rate of 72 percent.

Instrumentation

The two instruments used for data collection included the Maslach Burnout Inventory (MBI) and the Oregon School Administrators Stress Survey (OSASS).

Maslach Burnout Inventory

The MBI consists of a twenty-two item inventory asking respondents to indicate the frequency and intensity with which they experience the personal feelings or attitudes identified in the items. A Likert-type scale is used for both the frequency and intensity dimensions. The frequency scale ranges from (1) "occurs a few times a year" to (7) "occurs every day". The intensity scale is also a Likert-type scale ranging from: (1) "very mild, barely noticeable" to (7) "very strong, notice every day". A separate box is checked if the respondent never experiences the feeling or attitude described.

The MBI contains three factors or different aspects of burnout: emotional exhaustion, depersonalization, and personal accomplishment.

Oregon School Administrators Stress Survey

The OSASS was devised to determine school administrators' perceptions of the most stressful events related to the most stressful events related to the specific occupational routines of a school administrator. The instrument contains items in the form of statements about work-related activities, rated in terms of intensity. Subsequent research with the OSASS has involved the use of a frequency rating, as well as intensity ratings and both the frequency and intensity ratings will be used in this study. The frequency scale is a Likert-type scale ranging from: (1) "occurs a few times a year", to (7) "occurs every day". The intensity scale is also a Likert-type scale ranging from: "very mild, barely noticeable", to (7) "very strong, notice every day". A separate box is checked if the respondent never experiences the work-related situations described.

The OSASS includes five stress-related factors: administrative constraints, administrative responsibility, interpersonal relations, intrapersonal conflict, and role expectation.

There are several indicators from the professional life of California community college presidents to warrant the notion that stress is present in their career patterns. There is also everyday evidence of job burnout as described by Maslach. The problem addressed by this study is whether a significant relationship between OSASS scores and MBI scores can be obtained from the reports of California community college presidents responding to these surveys with their perceptions of stress and burnout. To assess the nature of the relationship, four research questions were proposed:

1. What is the relationship among the five factors of the OSASS (administrative constraint, administrative responsibility, interpersonal relations, intrapersonal conflict, or role expectation) and the three factors of the Maslach Burnout Inventory (emotional exhaustion, depersonalization, and personal accomplishment)?

2. Which of the five factors of the OSASS do California community college presidents perceive as most stress-producing for them?

3. Of the thirty-five items on the OSASS, which items are

found most stressful by community college presidents?

4. Are there differences in perceived stressors among groups of presidents based on gender, age, marital status, or college locale (rural, urban and suburban)?

The scores from the Oregon School Administrator Stress Survey (OSASS) were used to identify perceived stressors in the population of California community college presidents. Additionally, scores on the Maslach Burnout Inventory (MBI) were collected and correlated to the OSASS scores to determine the relationship between perceived stressors and job burnout for these administrators.

The design was typified as a correlational study in which perceived stress scores were to be correlated to experienced burnout scores. The study was also causal-comparative in nature, involving comparisons between groups of presidents based on demographic characteristics.

Findings

The purpose of the analysis was to determine whether a relationship existed between administrative stress and job burnout for community college presidents. Scores from the Maslach Burnout Inventory (MBI) and the Oregon School Administrators Stress Survey (OSASS) were categorized into three MBI subscales (emotional exhaustion, depersonalization, and lack of personal accomplishment) and five OSASS scales (administrative load, administrative responsibility, interpersonal relations, intrapersonal conflict, and role expectations). Respondents were asked to make two ratings on each subscale, one for the frequency with which relevant events occurred in their lives and one for the intensity of the events in terms of the effort involved to deal with them. For both inventories, the higher the score, the greater the feelings of stress or burnout. These subscale scores were then entered into parametric and non-parametric analyses to answer the research questions.

The data indicate that there is a strong correlation between the OSASS Role Expectation and Interpersonal Conflict and all three of the MBI factors. The correlation among these five class factors and the MBI factor Emotional Exhaustion is the strongest followed by the correlation between the MBI factor Depersonalization. There was a modest correlation between the OSASS factors and the MBI factor Lack of Personal Accomplishment.

The most stress-producing factor of the OSASS is shared by Administrative Load and Administrative Responsibility. The Administrative Load had a higher frequency rating and Administrative Responsibility had a higher intensity rating. Findings for intensity of effect were similar to the findings for frequency. Again, the Pearson product-moment correlation coefficients between the OSASS subscales of Role Expectations and Intrapersonal Conflict and the MBI scales of Emotional Exhaustion and Depersonalization were higher than for other subscale pairs. Correlations between Emotional Exhaustion and these two OSASS subscales were large (r = .57 and .49). Likewise, the correlations between these two subscales and the Depersonalization subscale were also large (r = .51 and .58). (The correlations between the OSASS subscales and the MBI subscales for intensity were negligible (below r = .20), slightly smaller than those for the frequency scores).

The community college presidents indicated that of the thirty-five items on the OSASS, in both intensity and frequency, writing memos and letters, supervising and coordinating, dealing with organizational rules and policies, gaining public approval and support, budgeting and participating in outside activities outside of work hours were the items that contributed most to their job-related stress.

Demographic characteristics did not appear to play a major role in how the community college presidents responded to the survey. Hence, it can be concluded that community college presidents do not differ in their perceived stressors due to age, gender, marital status, or college locale (rural, urban, or suburban).

Generally, it appears that California community college presidents do not perceive that they have a great deal of stress. The test scores indicate that the presidents report that they perceive only a moderate degree of stress in their chosen occupation.

IMPROVING TEACHING VIA TECHNOLOGY

WEDNESDAY, 16 JULY

1100 - 1230

PRE-INSTRUCTIONAL STRATEGY
AND FILM LEARNING

Moon K. Chang
Peru State College

Teaching facts and concepts with instructional films is a widely accepted practice in the classroom. Teachers use films to supplement or enrich related learning materials. However, a host of factors including the sequencing and arrangement of subject matter, previous knowledge of subject matter and intelligence appear to determine what and how much a student will learn from a film. Therefore, a variety of strategies has been suggested to prepare the students for new situations and knowledge. These strategies range from changing the behavior of the learner to changing the film structure (Arwady, 1978; Kantor, 1960; Newren, 1974). The function of these strategies is to direct attention of the learner to the specific film content. These techniques work with varying degrees of success when the instructor has previewed the film in question. These procedures are not always possible with the present day demands on the instructor and the requirement of film distribution.

There have been some suggestions that an advance organizer properly constructed and presented in advance of the film showing might lead to greater teaching efficiency (Chang, 1985; Bunson, 1978). Ausubel (1963; 1978) proposed that cognitive structure could be manipulated to facilitate the reception and retention of new material by an advance organizer. Advance organizers are introductory passages presented in advance of and at a higher level of generality, inclusiveness, and abstraction than learning material itself to give a general overview of the material (Ausubel, 1963). Advance organizers provide concepts under which the details in the learning passages can be subsumed to facilitate learning and retention. An advance organizer was initially conceived as a pedagogic device to be employed with written tasks. However, an extension of an advance organizer to film design and utilization was found in various studies. Bunsom (1978) devised a brief silent motion picture film and attached it to the main body of the film that he used for his study in order to give a brief overview of the film content. He found that the advance organizer was effective in teaching the sixth graders with a social science film. Chang (1985) found that the advance organizer was effective in increasing the learning and retention of the facts and concepts presented in a consumer film by the normal and educable mentally retarded children in the mainstreamed classes. A review of 124 doctoral dissertations on advance organizers completed in the U.S. which spanned the period from 1970 through 1984 indicates that the advance organizer strategy is effective in teaching the students with non-print materials (Chang, 1985).

This study attempted to verify whether a non-print advance organizer would raise the effectiveness of a science film when it was presented prior to the film showing to college freshmen. Specifically, this study focused on two questions. The first question was whether an advance organizer could aid in greater acquisition and retention of facts and concepts acquired from a science film than could be obtained without such a device. The second question was whether the use of an advance organizer would have a differential facilitative effect with groups of students, namely, high ability group and the low ability group as measured by grade point average. A non-print advance organizer used in this study referred to a set of tape narrated 2"x2" color slides presented in advance of a sound film from which the slides were made to give a brief overview of the film.

Method

The subjects were sixteen undergraduate freshmen. All subjects were white and primarily females who volunteered to participate. All subjects were majoring in Elementary/Special Education.

A short version (23 minutes) of the film, Birth of a Brain (1982), produced by Les Films du Levant was selected for this study. This movie film presented the prenatal and postnatal development of the human brain.

A non-print advance organizer consisted of two parts: one part was a series of 2"x2" color slides produced from selected frames of the movie film, and the other part was a script written around the major concepts of the film in order to give a general overview of the film content. A female read the organizer script onto an audiotape (2 minutes in length).

To obtain a learning test to provide information about groups and treatment differences, a pretest consisting of 33 items were given to 51 students enrolled at the same institution where the subjects for the main study were drawn. The final form of the five-option multiple choice test consisted of 25 item yielded Kuder-Richardson-Hoyt reliability estimate of .53.

A 2x2 factorial design was utilized with ability levels (high x low) and presentation modes (advance organizer plus film x film only) as independent variables, and the posttest scores as dependent variables. All subjects were assigned randomly to the four groups--two high ability groups and two low ability groups as measured by grade point average. Means of grade point average of each group on a nine-point scale were as follows: advance organizer group with high ability subjects (8.4); advance organizer group with low ability subjects (6.6); control group with high ability group (8.4); and control group with low ability group (6.8). Each pair of the high and the low ability groups received one of the treatments: advance organizer plus film or film only. The learning test was administered to all subjects immediately after the film presentation to test the immediate retention and two weeks later for delayed retention. To minimize individual differences due to speed factor, no time limit was given for completion.

Results

An ANOVA (equal *n*) was performed separately on the test data obtained from the immediate- and delayed-retention tests. Sixteen observations were included in the final analyses. Means and standard deviations on the tests were presented in Table 1; and the results of the ANOVAs were reported in Table 2. The results of this study indicated that significant difference in learning and retention was found among presentation modes. The Tukey Test was then applied separately to the data obtained from the immediate- and delayed-retention tests to determine between which means this difference existed.

See Table 1

See Table 2

The results indicated that on the immediate retention test there was a significant difference between the advance organizer group with high ability subjects and the control group with high ability subjects, and between the advance organizer group with high ability subjects and the control group with low ability subjects. The difference between the means of other groups was not significant. The results of the analysis on the delayed-retention test data indicated that there was a significant difference between the advance organizer group with high ability subjects and the control group with low ability subjects, and between the organizer group with low ability subjects and the control group with low ability subjects, and finally, between the advance organizer group with low ability subjects and the control group with high ability subjects.

Discussion

The results of this study indicated that the non-print advance organizer prepared for this study appeared to provide facilitative effect for both the high and the low ability groups in acquisition and retention of facts and concepts presented in a science film, and ability levels did not differentially affect the learning outcomes. These results are consistent with the results obtained by Bunson (1978) and by Chang (1985) who experimented the non-print advance organizer with a social science film and a consumer film respectively. However, a possibility that the better performance was simply due to being exposed to extra content material, such as an advance organizer, must not be ruled out. A meta-analysis review study indicated that an advance organizer showed a lesser tendency to facilitate learning when the control group studied the learning materials for a period of time equal to the combined time the experimental group studied the advance organizer and learning material (Kozlow, 1978). It is interesting to note that no interaction between the advance organizer and the ability levels was found. Other researchers have obtained similar results (Chang, 1985; Moore, 1982; Lucas, 1972).

Possible implications for the instructors are three: first, the advance organizer might enhance learning and retention of the film content when it is used as part of film showing; second, instructors might be relieved of the responsibility of always previewing film before showing it to class when an advance organizer is used as a means of previewing the film; and third, instructors might be able to save time substantially by previewing the advance organizer of a film instead of previewing the film in its entirety.

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Table 1

Means Scores on the Dependent Variables

Immediate Retention Test Scores			Delayed Retention Test Scores		
Group	Mean	S.D.	Group	Mean	S.D.
1[a]	15.0	2.16	1[a]	13.8	0.50
2[b]	11.8	0.91	2[b]	11.0	2.45
3[c]	13.0	1.15	3[c]	14.5	2.38
4[d]	11.0	1.40	4[d]	10.8	1.89

[a] Advance organizer group with high ability subjects

[b] Control group with high ability subjects

[c] Advance organizer group with low ability subjects

[d] Control group with low ability subjects

Table 2

Results of ANOVA

Immediate Retention Test

Source of Variance	SS	df	ms	F
Presentation modes	27.57	1	27.57	12.36**
Ability levels	7.57	1	7.57	3.39
Ability x Modes	1.55	1	1.55	0.70
Within groups	26.75	12	2.23	
Total	63.44	15		

Delayed Retention Test

Source of Variance	SS	df	ms	F
Presentation modes	42.25	1	42.25	10.89**
Ability levels	0.25	1	0.25	0.06
Ability x Modes	1.00	1	1.00	0.26
Within groups	46.50	12	3.88	
Total	90.00	15		

**$p < .01$

INTELLIGENT COMPUTER ASSISTED INSTRUCTION (ICAI): FLEXIBLE LEARNING THROUGH BETTER STUDENT-COMPUTER INTERACTION

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Intelligent computer-assisted instruction (ICAI) is a form of computer-based learning which incorporates artificial intelligence (AI) techniques such as knowledge representation and natural language processing in order to better adapt the computer instruction to the needs and interests of the students. An example of such a system is GUIDON, developed at Stanford University (Clancey, 1982) to help medical students learn how to diagnose a certain class of infectious diseases. Another is Anderson's (1985) LISP TUTOR, developed at Carnegie-Mellon University to teach undergraduates the basic programming features of the LISP computer language.

ICAI is important to university teaching in the promise it offers as an important new tool in the gamut of learning resources an instructor can place at the disposal of his or her students to foster learning. Developments in ICAI can also be expected to have a beneficial influence on the way we conceive models of learning, and hence will contribute to shape the future direction of educational technology proper. Far-reaching consequences for the nature of university teaching may well be involved here in the long run.

Features of ICAI

Artificial intelligence research, which serves as the foundation for ICAI efforts, is aimed at replicating in computer form some of the cognitive processes exhibited in human reasoning and human interactions generally. While this aim is necessarily limited (the extent of which is a hotly-debated issue), the current attention given to expert systems as potent advisors in complex decisional situations shows the power of this software technology to assist us in ill-defined or otherwise-complex tasks. One such task is promoting learning in a variety of settings and with students of diverse abilities, uncertain prior knowledge, and varied interests. Like their predecessor CAI systems, ICAI prototypes are meant to address these issues, although with added finesse made possible by the power of AI techniques.

The central feature of an ICAI system, as with any AI system, is a knowledge base comprising a large number of distinct knowledge elements. Unlike their counterparts in traditional CAI, these knowledge elements are not part of a sequential flow of control within the program, but instead can be retrieved and combined by a separate control module in response to the requirements of the situation at hand. This very fine modularisation of knowledge involves a structure (often known either as a semantic net or as a production rule set, depending on the techniques used) which makes some degree of inferential reasoning possible by the system. What this results in is a system which can respond to reasonable yet unanticipated questions put to it by the student. This result contrasts sharply with the much more rigid interaction (relatively speaking) of traditional CAI systems, in which all potentially meaningful questions and responses from the student must be anticipated by the courseware author and explicitely included in the program. Traditional CAI is frame-oriented, whereas ICAI is knowledge-oriented at a much finer level, that of the knowledge elements themselves.

A second powerful feature of many ICAI systems is the inclusion in the system of a component which can analyze student input expressed in natural English and which can translate this input into an internal form recognizable by the system's knowledge base. This natural language processing ability (itself an active area of research in AI) opens up the human-computer interaction well beyond the short-answer expectations and menu-driven interactions of CAI.

Thus, an independent knowledge base permitting inferential processing and a natural language capability combine to provide a large degree of flexibility in the way in which the learning session unfolds. The following brief extract from a GUIDON interaction with a medical student (whose input follows double asterisks) illustrates the extent to which this flexibility goes beyond that found in CAI.

```
YOU SHOULD NOW PROCEED TO ASK QUESTIONS THAT WILL ENABLE YOU TO MAKE A HYPOTHESIS
ABOUT THE ORGANISMS (OTHER THAN THOSE SEEN ON CULTURES OR SMEARS) WHICH MIGHT BE
CAUSING THE INFECTION.
** HOW IS THE FACT THAT THE PATIENT IS BURNED RELEVANT?
THE FACT THAT PATIENT-326 IS SERIOUSLY BURNED WILL BE USED TO CONCLUDE THAT PSEU-
DOMONAS AERUGINOSA IS ONE OF THE ORGANISMS WHICH MIGHT BE PRESENT (IN ADDITION TO
THOSE SEEN ON CULTURES OR SMEARS) [RULE 578].
** HELP
TRY TO DETERMINE THE TYPE OF THE INFECTION: BACTERIAL, FUNGAL, VIRAL, OR TB.
** WHAT IS THE PARIENTS WBC?
THE WHITE COUNT FROM THE PATIENT'S PERIPHERAL CBC IS 1.9 THOUSAND.
```

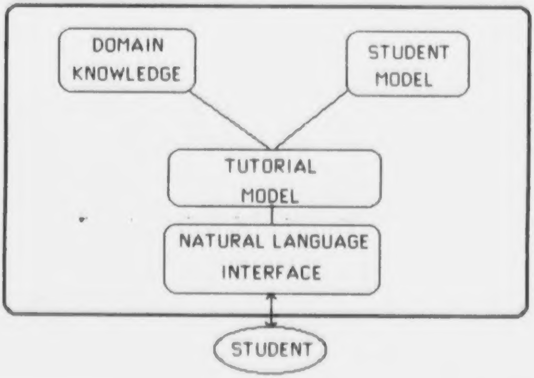
What ICAI makes possible, through its use of AI techniques, is an interactive learning session which gives great control to the learner as to how the session should unfold. Learner control of instruction, long-sought but not often realized in CAI, is a prime capability of ICAI, as has been indicated elsewhere (Duchastel, 1986a).

ICAI systems, however, are also meant to gently guide the student's exploration of the task-domain being learned. To do this, they need to explicitely model both the student's on-going status as it develops with respect to the domain as the learning session unfolds, and the very process of tutoring itself.

Given the flexibility involved in ICAI, the student modelling process must induce a representation not only of what error the student may have just committed (as is the case in frame-oriented CAI) but of the student's global knowledge of the domain, including areas where knowledge is fuzzy, as well as outright misconceptions. Such a global and dynamically changing model of the student is then used by the tutorial model proper to guide the interaction.

The tutorial model is meant to imitate the process which a human tutor would engage in similar circumstances. It includes a set of tutorial rules (such as 'if the student is forming an overgeneralization, provide him with an appropriate counter-example') which, working together, bring the student to recognize unfruitful leads and redirect the learning interaction. An examination of the tutorial features of the main current ICAI systems is in preparation (Duchastel, 1986b).

In summary, the principal components of a generalized ICAI system are involved in a structure like the following:


DOMAIN KNOWLEDGE
STUDENT MODEL
TUTORIAL MODEL
NATURAL LANGUAGE INTERFACE
STUDENT

It should be noted however that not all current ICAI prototypes have all of these features, as research in this field is very diverse and guided by a wide range of concerns, both pedagogic and computational.

ICAI in Quebec

What has been sketched up to this point is a broad outline of an ICAI system and of the concerns of this field of research. Before turning to a consideration of the impact of this new technology on university teaching and learning, a quick view of our current research in Quebec will be provided.

The ICAI system we are developing is an interactive system which will dialogue with students in the domain of geography. Geography (more specifically South-American geography) was the task-domain of the very first ICAI system developed (Carbonell, 1970). It is a domain characterized by a relatively stable set of facts and relationships which can be structured in a semantic net (the form of its knowledge base) which can then be queried by the student.

Learning takes place through a mixed-initiative dialogue, i.e. one in which either the student or the system can ask questions and expect a reasonable response from the other. One aim of our research which goes beyond the earlier system is to provide GEO (the name of our system) with a capability to automatically extend its own knowledge as it interacts with various students. Thus GEO will respond to questions from the student and ask some for tutorial purposes, but it will also ask questions when appropriate in order to learn from the student. The type of dialogue envisaged (GEO is still in its initial stage of development) is the following simulated conversation (student input follows double asterisks):

```
...
** WHAT IS THE CAPITAL OF ONTARIO?
TORONTO.
** WHAT IS ITS POPULATION?
THE POPULATION OF TORONTO IS 2.5 MILLION.
** WHAT IS THE POPULATION OF KINGSTON?
I DON'T KNOW.  WHAT IS KINGSTON?
** IT IS A CITY.
O.K. WHERE IS IT?
```

** **IN ONTARIO.**

O.K. IS KINGSTON NEAR TORONTO?

** **DO YOU KNOW VANCOUVER?**

YES. VANCOUVER IS THE CAPITAL OF BRITISH-COLUMBIA.

WHAT PROVINCE IS NEXT TO BRITISH-COLUMBIA?

** **ALBERTA.**

RIGHT.

...

What is sought in GEO is the ability of a system to augment its knowledge base as it encounters new information while interacting with students. This is a form of knowledge acquisition termed 'learning from being told' and is an active area of investigation within AI.

As seen in the dialogue above, GEO must possess a good natural language processor if it is to correctly interpret input from the student in the flexible manner portrayed. It will also need to keep track of what each student knows about geography and of any misconceptions he might have. Knowledge of the student, developed over many interactions, will guide the interaction, leading the student to review hazzy facts or explore new areas. The student however, despite tutorial guidance, can always initiate a new line of discussion, leading the system to be responsive to his or her own interests.

GEO is currently under development, and while its domain of discourse is simple in terms of the type of knowledge it involves, it seems to us to be a potent tool for exploring learning and tutoring strategies, and eventually other forms of knowledge representation as well.

The rôle of ICAI in teaching and learning

The fact that ICAI is an application area of artificial intelligence research and that its goal is to model human tutoring processes may lead some people to believe that its long-term influence will be a dehumanizing one through which students will become more and more machine-bound and narrow in outlook. That view is certainly ill-founded, however, when one considers how the introduction of past technologies, from the book to CAI, has only enriched the learning opportunities of students and offered them wider scope for intellectual exploration. Of course, any technology can be abused-until such cases eventually wither away from neglect, programmed instruction being a prime example. Any new technology requires some time for experimentation and maturation, its potential unfolding through trial and error.

The promising side of ICAI research lies in two areas. On the one hand, ICAI systems continue the quest of CAI for adapting instruction to the needs of the individual learner. Because of its particular features, ICAI can individualize learning to a much finer level than CAI can. This is due in large part, in addition to its extensive student modelling aspect.to its potential for true learner control of instruction through natural language querying. In CAI, all interactions must be explicitely preplanned by the course designer, a formidable and never totally successful task. ICAI, on the other hand, creates a learning environment in which the student can spontaneously explore the task-domain according to his or her own interests and perceived understandings.

The very flexibility of learning interactions offered by ICAI also affects our own models of learning, which constitute a second impact of ICAI research on our view of the educational process. Educational technology has generally involved a didactic philosophy of teaching in which instructional design has always played a major role. Prescriptive design is still involved in ICAI systems, but the major aim is one of creating much more open-ended learning environments (responsive environments) in which the student can freely explore a domain of interest with the knowledge that he or she is in control of the learning situation. ICAI thus adds a new dimension to learning, without however removing the value of other means of instruction where these are appropriate.

Computer technology is innovating at a very fast pace in many fields and it is not possible to predict just how it will eventually impact on university teaching and learning. Contemporary education however has the interesting task of integrating this new technology (in its most recent forms) into the educational process in order to profit from its promise of contributing to enhanced student learning.

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THE VIDEO DOCUMENTARY:
A TERM-PAPER ALTERNATIVE

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If it hasn't happened to you already, it may soon: a student asks if it is all right to do a video project instead of the written term-paper that you customarily assign.

Television, of course, is nothing new to the college classroom. For most of the time until now, though, television has been under the control of the faculty or media specialists. But with some 25,000,000 video cassette recorders currently in American homes, and with a rapidly increasing number of video cameras to go along with them, the widely-heralded "video revolution" is coming into the classroom from the opposite direction. Today television is in the hands of students.

A teacher confronted with this student request can respond within a range of two extremes. One extreme is to say **no**--a term paper is a ***paper***, with defined academic standards, forms, and conventions; it is not a collection of video images. The other is to say **yes**--and blithely disregard academic conventions because of the novelty of the undertaking.

Both of these extremes avoid two important decision tasks:

1. ascertaining the ***distinctive nature*** of a video project as an alternative for the traditional term paper, and

2. considering what ***different but equally valid standards*** might apply to this alternative approach.

Having taught a course in portable video at Queens College for some fifteen years--during which my students have produced over five hundred short video documentaries, many of which they submitted as projects in classes in other academic subjects--I have observed a wide range of successes and failures, both in student production and in faculty reception. Some principles and guildelines which have emerged from this experience are presented below. Following them should help increase the number of successes.

1. There should be a valid reason for choosing video as an alternative means of accomplishing a term-paper assignment.

I mention this point first, for often students feel that the possibility or availability of video is itself sufficient reason. (A variation on the Mt. Everest effect: we use video because its *here*. Certainly, one watching television news programs realizes that many if not most stories involve electronic field production because that is how television stations cover news. Sound actuality via radio or a written account in a newspaper might be more appropriate.)

But in the case of a term-paper alternative, there should be something in the nature of the situation being investigated that either *requires* or would *significantly benefit* from visual documentation. For example, such social phenomena as youthful "breakdancing" or conventions for "maintaining personal space" in adult street encounters call for visualization rather than a verbal description. Even the personal interview can benefit from video recording because facial expression and body language add to the answers the interviewee gives to questions.

2. The video process should conform to the visual documentation requirements of the particular academic field.

In some academic fields, such as anthropology, these requirements are well established and commonly followed. In many instances , these requirements mean the video maker will employ wider, more inclusive shots than would be found in ordinary shooting following a conventional film aesthetic. It is also essential that the visual documentation show those aspects of the subject that a particular academic field holds to be important--meaning in certain instances an academic video maker will concentrate more on shots of process than people. In the case of legal work, the requirements of visual documentation preclude internal editing and require that a time reference be included in the recorded footage.

3. There should be adherence to the general ethical standards of visual documentation.

Respecting the long tradition in the non-fiction film, the video documentarian must avoid the temptation to stage, fake or unduly arrange the elements being documented to promote a particular point of view. Video documentation in an academic context requires the exact recording of actual events and individuals. For example, if a student is making a documentary about the effects on the environment of a new state "bottle law" (which requires that all beverage containers be subject to a deposit at the time of purchase, which is refunded upon the return of the empty container), the student must not scatter spare bottles along an otherwise clean roadside to indicate that the law is not serving an environmentally beneficial purpose--or conversely, prior to shooting, clean up such an area to show that it is.

4. There should be written documentation to accompany the video product.

While the video documentary should have essential coherence, structure, and detail so that it can stand by itself as a valid informational entity, the student should submit accompanying written documentation to indicate where each scene was shot, at what time, and to identify of all the key individuals appearing in the videotape. Such "footage notes" correspond to the common footnotes used in the traditional written term-paper.

Discussion: While the proliferation of home-type video cameras make the gathering of raw documentation footage easier, this level of equipment does not automatically insure appropriate quality in the end-product. Editing is essential to make effective use of time and to structure the finished videotape as an efective communication vehicle. Ideally, the college or university should provide an editing station where raw footage can be logged, an edit-decision sheet prepared, and the identified sections of the raw footage transferred in the desired sequence via "assemble edits" to an edited master. Editing in the camera ("crash editing") not only subjects the tape to visual glitches, but does not permit a considered order for the material in the final product that is different from the often happenstance order of shooting. Such a product is a trying experience to watch, and is enough to make you want to go back to correcting written term-papers.

On the other hand, many times students can actually advance the frontiers of visual documentation in a given field because they can take a fresh approach towards the field reality of an academic subject. Is textbook Spanish identical to street Spanish the large cities in the U. S.? The textbook may not have this material, but students can get it immediately and effectively. Such "access skills" are a bonus learning outcome from video documentation.

Note: This paper is accompanied by videotaped examples of student documentary work.

OVERCOMING ANXIETY AND RESISTANCE TO TECHNOLOGY: AN ORIENTATION PROGRAM FOR TEACHING ON TELEVISION

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Like everyone else, many college teachers are resistant to change. When experienced faculty members are asked to teach in a television studio, where some students can be heard but not seen, they are often anxious or even hostile. In a recent survey of 70 media-based educational programs, the most frequently encountered problem cited by respondents was faculty resistance to the use of telecommunications for teaching (Lewis, 1983). Designers of instructional television (ITV) systems have done as much as they can to make the studio-classroom environment similar to regular classrooms, but there are still cameras, microphones and technicians to remind the teacher that things are indeed different from what they are used to.

Faculty resistance may be expressed in many ways, from flatly refusing to teach on a television system to ignoring the studio setting, thereby ignoring the students who are learning at a distance. It was the goal of the authors to reduce this resistance and to help teachers begin to explore the full potential of their new teaching environment.

Teaching in the Studio-Classroom

To best explain both the problem and the process developed to deal with it, it is important to understand the environment in which television teaching takes place. Television studio-classrooms may be converted professional television studios, or they may be converted conventional classrooms. But most commonly, especially when the ITV system is large, they are specially constructed rooms designed for optimum broadcast quality. This last category describes the studio-classrooms at The University of Maryland.

Each of Maryland's studio-classrooms seats about fifty students and is designed to include all the usual classroom elements. Each is furnished with a desk for the teacher, tables and chairs for the students, and a board at the front of the room. Some elements, however, are unusual. For example, the board is white, not black or green. The teacher wears a small, wireless microphone. There are small black and white television monitors, fixed to the students' tables and a similar monitor is on the teacher's desk. At the front of the room is a large color monitor so the teacher can easily check what is being broadcast to off-campus students.

The studio-classroom is also furnished with three video cameras. Mounted as unobtrusively as possible, they can cover the entire room. One camera, at the back, can show the front wall with its board. It can also zoom in on a five-square-inch area of that board. A second camera, mounted on the side wall, can focus on the students in the room, and is also used for profile views of the teacher. The third camera is recessed into the ceiling above the teacher's desk. Able to rotate 360 degrees, this overhead camera gives the teacher pedagogical options not present in a conventional classroom. For instance, a teacher may bring in source material and show it to the students using this camera. The teacher may also choose to write on a pad at the desk, rather than using the board. The overhead camera can rotate to bring a pad angled for easy writing into allignment with the television screen. It is this camera which makes the small classroom monitors a necessity.

Finally, the studio-classrooms have capabilities that are not immediately apparent. Teachers are able to patch films, videotapes and slides directly into the broadcast system, thus bypassing cumbersome projection machinery. Computer outputs can also be patched directly into the system. Probably the most radical feature is the ability to preserve any lectures on tape for student review or make-up sessions.

When the new teacher enters the studio-classroom, therefore, the environment is both familiar and unfamiliar. The orientation program described below was designed to make the unfamiliar aspects as non-threatening as possible, while helping the teacher take advantage of the unique capabilities of an ITV system.

Orientation Program

The most difficult problem faced in providing an orientation to an ITV system is convincing faculty members, many of whom have taught for decades, to attend. Each semester, all teachers whose courses are scheduled on ITV, and who have not taught on the system before, are sent written invitations to the orientation meeting. A few days before the meeting, they are reminded by telephone of where and when the orientation will take place. One or two enthusiastic faculty members who have had experience on the system are also invited to attend the orientation to act as peer models for those new to the system.

Participants gather in a conference room near the studio-classroom to eat a light dinner and to meet one another informally. There is no video equipment in the meeting room, and every effort is made to maintain a relaxed atmosphere.

The orientation begins with an introduction of key staff members, a description of administrative details, such as, how to handle homework assignments for off-campus students, and an explanation of all the forms used during the term. Questions are encouraged, and discussions often ensue.

After a brief break, the group walks the short distance to the studio-classrooms. The faculty members explore the environment, then sit in the students' seats while the trainer demonstrates the use of the microphone and the room's three cameras. She then asks the participants to watch a short videotape which was shot in the studio-classroom, and which will give them a chance to see the versatility of the ITV system.

This videotape, "ITV Nationals," was produced by the authors in August, 1985. It features Mel and Lou, two sportscasters, giving a running commentary on the performance of Donald, an ITV veteran competing in the ITV Nationals. As Donald teaches his statistics class, he makes use of all the special elements of the studio-classroom. He also makes several mistakes. These mistakes are those most commonly made by users of the system. They are pointedly described by Mel and Lou. The tone of the videotape is light and humorous.

When the videotape ends, the trainer leads a discussion of both the ways in which Donald used the system well and the mistakes he made. The group also discusses what he might have done to make even better use of the ITV system.

The general response to the tape and to Donald is laughter (a relaxation response), just as it was designed to be. In the post-program survey filled out by participants, the videotape and ensuing discussion are most often cited as the part of the orientation which most helps to alleviate anxiety about teaching on ITV. Allowing the faculty members to focus on Donald and his problems seems to make it possible for them to discuss their own resistance to the system without feeling personally threatened.

The final stage of the orientation involves having each teacher come up to the "stage," put on the microphone, and try out the board, the overhead camera, and any other elements with which they choose to experiment. This practice session tends to prompt questions about teaching techniques which the trainers use to encourage further discussion among the participants and with the ITV technical staff.

Participants' Evaluation of the Program

At the end of the orientation program everyone is asked to fill out a short evaluation form (see Appendix A). Of the 33 faculty members new to ITV who have attended the orientation program, over half had been teaching in their field for less than three years, while 25% had been teaching over ten years.

Forty percent of the participants responded to the question about their greatest concern in starting to teach on the ITV system by stating that they were concerned about how their own teaching _style_ would work on television. Less than 25% seemed concerned about _how_ to teach their class on television. It is not surprising that all of these ITV novices thought that the videotape, "ITV Nationals," helped their understanding of what an ITV teaching session was like (all responded in the "some" to "quite a lot" range on that question). Most thought the "ITV Nationals" gave them ideas about what to try or avoid in their own ITV classes (96% responded in the "some" to "quite a lot" range). All the participants thought the orientation session would help "some"; 48% thought it would help "quite a lot." Overall, the participants seemed both to learn from and to enjoy the orientation program. They were certainly less anxious about using the ITV system once they had a chance to try it out and to talk with colleagues about it.

To determine whether or not the teachers' perceptions of the effects of the orientation program would actually result in better performance on the system, we informally interviewed ITV technical staff who have been watching ITV classes for several years. They report that more teachers have begun experimenting with the special elements of teaching in the studio-classrooms, and that there have been fewer instructor-related problems in the semester following the introduction of the orientation program.

Summary

In general, the three-stage approach to introducing novice faculty members to an instructional television system seems to be working. These stages (1. reviewing administrative procedures in a relaxed environment; 2. viewing a humorous videotape of a teacher using the system and discussing what he did right and wrong; and 3. practicing with the unusual elements of the studio-classroom) progressively reduce faculty members' resistance to using the system. This results in a better environment for both teacher and students, as together they take advantage of the technology available to them over an instructional television system.

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Appendix A

Evaluation of ITV Orientation

Please respond to the following items as indicated.

1. Have you ever taught on an instructional television system?
   a. yes, this one
   b. yes, similar to this one
   c. yes, but very different from this one
   d. no
2. How long have you been teaching in the field you will be teaching on ITV this term?
   a. 0 - 1 year
   b. 2 - 3 years
   c. 4 - 10 years
   d. more then 10 years
3. When you were first asked to teach on the ITV system, how would you characterize your greatest concerns?
   a. How the system functioned
   b. how to teach your class on the system
   c. how your presentational style would work on television
   d. other (please specify)________________________
4. Which part of the orientation helped alleviate any concerns you had about using ITV system?
   ____
5. How helpful was the "ITV Nationals" tape to your understanding of what an ITV presentation is like?

1	2	3	4	5	6	7
Not much			Some			Quite a lot

6. Did the "ITV Nationals" tape give you any ideas about what you might want to do or to avoid during your ITV classes?

1	2	3	4	5	6	7
Not at all			Some			Quite a lot

7. How much do you think the whole orientation session will help you with your ITV class?

1	2	3	4	5	6	7
None			Some			Quite a lot

8. What other information would you like to see covered in the orientation?
   ____
9. Do you have any additional comments about the orientation session?
   ____

TOOLS OF THE TRADE: VIDEO AND LANGUAGES FOR BUSINESS

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In an attempt to knock down the traditional, teacher-centered methods of instruction, education's critics are pulling out the sledge hammer of accusation and pounding away with charges of "arid teaching...and self-serving curriculums...." (1). Armed with one educational assessment report (2) after another, the critics are trying to force the schools to respond more effectively to the unprecedented and fundamental changes taking place in our society and the world of the 1980's and beyond.

Unlike the huffing and puffing criticisms of the past, the current attacks on education are disquieting for a number of reasons: they are well-orchestrated and aimed at every sector of education; they are led by prestigious groups such as the National Institute of Education and the Endowment for the Humanities; and, they leave the reader with the uneasy feeling that, this time, neither the attacks nor the critics will go away.

An in-depth, critical evaluation of the current crop of "education reports" with their many recommendations for improving education is a mind-boggling undertaking, and although it is tempting to conclude that "in and of themselves, they are overstatement at best, misguided at worst," the facts are that approximately 50 per cent of students who start college never finish; about 12 per cent of the best and brightest high school seniors do not bother coming to college at all; and, an increasing percentage of students currently enrolled in higher education is dropping out.

Undoubtedly, there are as many reasons for not coming to college or dropping out as there are students. Nevertheless, one of the major reasons may be the one identified by the National Institute of Education, namely, student disengagement or the mental detachment from learning. (3)

Are there any of us teaching today who have not experienced student detachment and indifference? Are there any of us who have not had students--bodily in our classrooms and lecture halls--whose hearts, minds, and interests were far from us? Are there any of us in the profession who are not interested in re-engaging student interest in what is going on in our classrooms?

According to the National Institute of Education's report, the key to re-engaging student interest is to treat them like fellow learners, involve them more fully in academic life, and increase ways in which students can contribute to their own as well as others' learning. Specifically, the report suggests the following: 1) that teachers become more accessible to students; 2) that teachers measure student progress more carefully; 3) that teachers change and improve their teaching methods; and, 4) that teachers use technology.

This report--and others like it--has its critics. L. Jackson Newell, liberal arts dean at Utah, finds it "...long on general advice, short on ideas...." He points out that if faculty members were to implement the suggestions, "...it will require a shift in academic values" because "...professors are already stretched to the point of disfunction by competing pressures. I refer not only to research, publishing, and teaching, but also to the moonlighting in which many engage for economic survival....I contend that it is no longer in the best interests of scholarship or teaching to expect all university professors to do everything at once." (4)

While no faculty member could realistically be expected to do everything at once, it may not be unreasonable to assume that most faculty members could, if they wanted to, shift their academic values enough to do something that could enhance their teaching and increase the number of ways in which students can contribute to their own as well as others' learning.

It is the aim of this article to propose the possibility that in languages for business the systematic integration and use of video can help carry the main instructional load, offer teachers another method of instruction, and re-engage students' interest in their own learning. For the purposes of this discussion, 'video' is defined as the recording and playback of videotapes produced by the learner, and 'languages for business' are viewed in the larger context of acquiring target language culture and communicative behaviors as opposed to the narrow and limited acquisition of specialized business vocabularies.

The quest for verisimilitude, namely making instruction more concrete and real, naturally leads language teachers in search of methods, materials, and techniques that will encourage the active use of the target language and reinforce appropriate communicative behaviors. Whatever else we may say about methods, materials, and techniques, one thing is certain: they are all tools of the trade.

A tool of the trade that has been around for a long time and is just now enjoying an almost unnoticed renaissance is the instructional use of video. No longer being overlooked in favor of computer technology, video technology for the first time is beginning to surpass interest in computing. It is this phenomenal jump in the acquisition of video equipment that partially answers the question "Why video in business language courses...why not any one of the other technologies?" Not only is video "in," that is to say, available, but it is also user-friendly and able to carry the main instructional load.

AVAILABILITY

In the approximately 81,000 schools in the U.S.A., the instructional use of video has taken a major jump. According to Quality Education Data, a market research firm, the number of U.S. schools using video equipment for instruction grew from 35,545 schools to 56,166 in the year ending September 1984. (5) This increase is largely due to significant drops in prices for videocassette systems. A 1980 survey of educational institutions by Knowledge Industry Publications found that 60% of educational users surveyed owned 3/4" videotape machines; 54% reported having 1/2" equipment; and more than 18% had other formats. Eighty-six per cent had video studios, more than 80% had editing equipment, and 85% reported having cameras (89% specified studio cameras, 83% portable or portapak cameras). Seventy-nine per cent reported color cameras and 78% black and white. (6)

Although statistics on the availability of video equipment are of interest, and perhaps, even useful, they are not, of course, synonymous with evidence that the increasingly available equipment is being put to good use. What the statistics do seem to show is that if we want to use video in our teaching, we have a better than average change of finding it in our schools.

USER-FRIENDLY

Technology that is difficult to operate gets in the way of instruction and learning. Today's videocassette systems (7) are continually in the process of becoming easier to use, transportable, light-weight, and cost-effective. Cameras usually weigh less than five pounds, the recording/playback deck--to which the camera attaches via an umbilical cord--weighs less than 15 pounds. Videotapes can be played back through a TV or monitor. Once the basic equipment has been acquired, the day-to-day operational problems are few because, generally speaking, the equipment is rugged, and videotapes can be re-used (averaging about 100 passes).

Most often when video is used, it is used in the passive, non-active modes of large-group viewing, small-group viewing, and individual viewing. Like film, it is used to "...present information that involves motion, describes processes, documents events, and shows relationships...." (8) This traditional use of video has aided and abetted a situation that has been described by John Loughary as a "machine-independent system...." (9) In the traditional, teacher-centered methods of instruction, we can virtually remove every machine from every classroom without significantly changing instruction or learning. This is because, according to Loughary, "....educators have used machines to assist them to achieve results which were planned independently of the machines." If we elect to use video in an active mode, namely in do-it-yourself productions created by students, then the results we want to achieve cannot be planned independently of the video being used; video in this case helps us carry the instructional load and cannot be removed from the teaching/learning process without changing the outcome.

How? How could we go about integrating student-produced video in languages for business? We begin by considering two procedural matters: First, the tangible externals, namely equipment selection and the integration of video into the curriculum; and, secondly, the elements of course design such as problem, objectives, strategies, learning activities and evaluation.

EQUIPMENT SELECTION

It is not the aim of this discussion to examine all aspects of equipment selection. Many fine books exist on the subject--a selection of which can be found at the end of this manuscript. (10) At the risk of belaboring the obvious, suffice it to say that four components comprise the basic videocassette system: camera, microphone, videocassette recorder (VCR), and television receiver/monitor. In addition to these basic pieces of equipment, other supplementary equipment may be desirable. (11)

The selection of the specific video equipment for the nucleus of a portable, studio, or combination system depends on a number of factors, not the least of which is cost. In starting up a video production unit, we can project the cost of the basic, portable videocassette system to be in the range of $2000-$3000 (12). This is not to say that video is cheap; it is reasonable, however, and as prices continue to decline, it is becoming more and more within reach of schools with modest budgets.

INTEGRATION OF VIDEO IN CURRICULUM

Plato, in the Seventh Book of the Republic, defines education as the business of helping each citizen develop his innate powers of vision by turning him in the right direction towards the light. Plato's view of helping everyone develop his or her own power of vision has been overshadowed in favor of the authoritarian tradition which views teaching as means to the end of 'filling empty vessels.' It could be argued that if our students are empty vessels to be filled, it is only because they are bodily in our classrooms but mentally detached from what is going on. In student-produced video, the spotlight is not on the teacher dispensing information, but rather, on the student who is actively engaged in his own learning; both teacher and video technology are there to help facilitate the development of the learner's 'innate powers of vision.'

Since, in teacher-centered methods of instruction, teachers do spend most of their time dispensing information, it may be difficult for them to switch from being the primary source of information to being responsible for creating a successful learning environment for students who will take center stage with a technology that allows them to develop their powers of vision. How easy is it for teachers to become managers of the learning environment? Undoubtedly, it depends on the individual teacher. However, the charge that teachers end up lecturing because they are not trained or prepared to do anything else may be hard to swallow not because it is false, but because it is true.

The second set of procedural matters that must be considered is the matter of course design. Here it will be necessary for us to examine the learning problem, objectives, strategies, learning activities, and evaluation of performance.

PROBLEM

The learning problem facing business language teachers is the real-life communication interaction, that is, the communicative behaviors as they occur in business. For example, in languages for business, the real-life communicative behaviors can be found in such areas as advertising, buying-selling-merging a company, hiring-firing-promoting, custom laws and regulations, product development, etc. Each of these communicative behaviors is further broken down into units, each with a basic learning objective or goal.

BASIC LEARNING OBJECTIVE

For each unit of the larger communicative behavior, we must state what it is we want our students to be able to do as a result of having studied the unit. Although for the purposes of this discussion, we are using English for Specific Purposes (ESP) in our examples, the framework is similar for Business French, Business German, Business Spanish, etc.

A basic objective in a unit on commercials in an ESP course could be stated as follows: **Students will be able to identify, articulate, and demonstrate a popular theme in commercials.** In addition to a basic objective, such a unit also has a number of specific objectives.

SPECIFIC OBJECTIVES

Specific objectives focus on *how* students will demonstrate mastery of the basic objective. Returning to our previous example of a unit on commercials in an ESP course, we could state the specific objective as follows: **Students will be able to: 1) plan, script, record, playback, and evaluate a 30 or 60-second commercial on the theme 'Be good to yourself;' 2) evaluate their student-produced commercials in terms of visual, verbal and non-verbal communication factors, and show in their productions how non-verbal and verbal signals carry the message in commercials.**

Staying with our example of ESP commercials, let us next look at possible teaching strategies in terms of what could appear in the teacher's lesson plans.

POSSIBLE TEACHING STRATEGIES

In the teacher's lesson plans, the following strategies could be noted and employed:

1) Students are to view selected (teacher-previewed) Tab, Geritol, and L'Oréal commercials, copies of which have been placed on reserve at the learning laboratory, the library and the student center.

2) Students are to read *How To Be Your Own Best Friend*, analyzing the relationship between people being told to be good to themselves on the advice of a book and how they can be *shown* the same thing with a commercial for a product or service.

3) Furthermore, students are to read *Be My Guest* (copies of which are on reserve at the learning laboratory and the library) for an examination of the concept of how we can best serve ourselves by serving others.

4) A teacher-led discussion of the be-good-to-yourself concept is scheduled for the end of the week.

5) The teacher outlines and explains student-produced, 60-second commercials that will be the culmination of the unit.

6) The teacher divides the class into groups of five; each group is to research, plan, script, record, and present a 60-second commercial for a real or imagined product or service woven around theme 'Be good to yourself.'

7) Individually, each student will prepare a 'storyboard' of a possible commercial; each group will develop a 'shooting script' for the final unit project.

8) For students who need to refresh their memories about video basics...the following reference books are on reserve in the library: John LeBaron's

Making Television, chapters 1 and 2; Fuller, Kanabe and Kanabe's Single-Camera Video Production, chapters 1 and 2; Peter Utz' Video User's Handbook, 2nd ed., chapters 5,6,8,14, and 16. Arrangements have been made with the learning laboratory personnel for students who want additional 'hands on' video training. Call for an appointment.

9) Students are encouraged to view selected titles from The Bellcrest Story, Bid for Power, and ESP Business, which are available for viewing at the learning laboratory.

10) Also on reserve in the library: The Complete Handbook of Business English and The Book of Business Knowledge.

LEARNING ACTIVITIES

Besides commercials, what other types of learning activities can business language teachers work into their lesson plans? In languages for business, do-it-yourself video activities are of two general types: student activities and teacher activities.

STUDENT ACTIVITIES

The following activities--and different variations of them--can be undertaken by business language students:

1) **Simulation Games**. Realistic imitations and contrived models of business communicative behaviors.

2) **Teaser Scenarios**. Brief, one-minute videos showing a business communication situation which stops mid-sequence; students must come up with appropriate and suitable completions.

3) **Roleplays**. Little plays in which students assume various identities in selected business communication interactions; these are recorded, played back for analysis, and evaluation.

4) **Mime Scenarios**. Videos without audio to illustrate non-verbal behavior; students must write suitable audio, that is, dialogues to go with the scenarios.

5) **Talk Show Take-Offs**. Video versions of popular talk show formats where students research and role play prominent business people interviewed by one or several hosts.

6) **Commercials** (Spoof-commercials and Counter-commercials). Fifteen, 30-second, and 60-second spots which are researched, scripted, and recorded by students for real or imaginary products or services in the form of comic versions or counter versions taking the opposite point of view.

TEACHER ACTIVITIES

In do-it-yourself student-produced video, teachers are not dispensers of information but information gatekeepers, information managers, and diagnosticians-counselors-tutors. Their new functions in each of these capacities are as follows: As information gatekeepers, teachers determine basic and specific learning objectives based upon subject content and how students think and learn, and they select appropriate materials and learning experiences that will help students achieve learning objectives in an enriched learning environment created and controlled by the teacher; as information resources managers, teachers prepare students for the use of appropriate learning resources and explain the reasons for their use; and, as diagnosticians-counselors-tutors, teachers assist students in maximizing their learning potentials, help students identify personal learning difficulties, and devise strategies to overcome such difficulties.

EVALUATION

Perhaps, no area of learning is as troublesome as testing and evaluation. In courses built around student-produced video, we have an opportunity to evaluate the improvement of learning in a manner not possible without video. With student-produced video, students (without the teacher present in the room) record their classroom video projects. At the same time that students are recording such projects, the teacher (in another room) views the production and records comments and suggestions for improvement on the second, unused audio track (13) of the videotapes. Students play back the tape, complete with teacher comments, and devise ways to improve problem areas in pronunciation, syntax, grammar, non-verbal communication, conceptualization, etc. The project is re-shot by students and re-evaluated by the teacher for evidence of improvement. Grades are assigned on the degree of improvement.

CONCLUSION

Student-produced video--like all instructional methods--has its critics, most notably those who point out that it is highly elitist. This charge is made not in the sense of "student-produced video is a superior method," but rather in the sense of "only the wealthy, suburban schools can afford it, not the poor, inner-city schools."

Although some schools have more money than others, no school--suburban or inner city--operates entirely without money. Without a doubt, video is not cheap; what is doubtful, however, is that no inner-city school can afford it, and all suburban schools can. Each school has its spending priorities; money spent on video cannot be spent on something else. It is not just a question of money; it is also a question of priorities.

Given the opportunity to improve, many of us in education do what we have always done, only more of it. Most of us believe we can produce the perfect course--provided we are given enough time, resources, and financial rewards to do it. Student-produced video allows teachers to be innovative (14) and experimental with the new 'tricks and tools' of the trade. As information gatekeepers and managers, as diagnosticians and counselors to our students, we can create a rich learning environment in which our students learn by doing the target language via video--a technology that is available, user-friendly, and increasingly less expensive. Students can use video technology in simulation games, teaser scenarios, roleplays, mimes, commercials and other activities.

When it comes to using video in languages for business, we must, as Neil Postman suggests, "...assume an experimental posture because there is no strong evidence that what we are doing now is the right thing." (15)

REFERENCES

(1) Wiliam J. Bennett, quoted in Malcolm G. Scully, "Edowment Chief Assails State of the Humanities on Campus," Chronicle of Higher Education, 28 Nov 1984, p.1.

(2) The current educational reports are as follows: "A Call for Change in Teacher Education," Chronicle of Higher Education, 6 Mar 1985; "Integrity in the College Curriculum..." Chronicle of Higher Education, 13 Feb 1985; "To Reclaim a Legacy," Chronicle of Higher Education, 28 November 1985.

(3) "Involvement in Learning--Realizing the Potential of American Higher Education," a 100-page report is critically examined by L. Jackson Newell, Dean of Liberal Arts Education at the University of Utah, "A Catalyst and a Touchstone," Change (Nov/Dec. 1984), pp. 7-10.

(4) L. Jackson Newell, "A Catalyst and a Touchstone," Change, Nov/Dec 1984, pp.8-9.

(5) Educational Technology, February 1985, p. 1.

(6) Paula Darnov, Louise Moore, and Adrienne Hickey, Video in the 80's (New York: Knowledge Industry Publications, 1984), pp. 76-77.

(7) Video is available in a number of formats: two-inch quadraplex for professional studio decks using four video heads; one-inch for semi-professional; three-quarter inch also called "u-matic"; half-inch and quarter-inch. Half-inch is the most popular. Two videocassette formats are popular: Betamax and Home Video System (VHS). They are incompatible.

(8) Jerrold E. Kemp, Planning and Producing Audiovisual Materials(New York: Harper and Row, 1980), p. 262.

(9) John Loughary, Man-Machine Systems in Education (New York: Harper and Row, 1966), p. 4.

(10) The Video Primer (New York: Links, 1974); Television Production (New York: McGraw-Hill, 1979); Practical Video (White Plains, NY: Knowledge Industry, 1978); Video in Education and Training (New York: Focal, 1980.

(11) Supplemental equipment includes but is not limited to the following: a switcher, special effects generator, editing VCR, editing controller, sync generator, time-base corrector, test signal generator, audio and video mixers, title/character generator.

(12) Sony, Hitachi, JVC, Panasonic, and other manufacturers make equipment for educational applications.

(13) This evaluation technique is an adaptation of what is known as 'video self-confrontation.'

(14) We can be innovative all the way through graduate school. California's University of Advanced Studies requires PhD candidates to produce a video thesis in order to earn the PhD in Education.

(15) Neil Postman, "Toward Multiple Learning Techniques," American Education in the Electric Age (Englewood Cliffs, NJ: Educational Technology Publicaitions, 1974), p. 134.

CAMPUS-CORPORATE LINKAGES

WEDNESDAY, 16 JULY

1100 - 1230

CAMPUS AND CORPORATION: DEVELOPING THE COUPLINGS

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In American higher education most students attend public institutions, supported by the various states. Most of the business and commerce is private, largely through corporate entities. There is growing recognition of mutual needs for support of each for the other. In each case "higher education" and the "corporations" are made up of many discrete units with their own organizations, missions, publics and personnel. At the national level, cooperation between the two seems to be at an all-time high. A recent meeting of the American Council on Education entitled "Corporate/Campus Cooperation" was co-sponsored by the Council for Financial Aid to Education.

Avowed intents to cooperate and national level of visibility of mutual involvement may support, but not cause involvement of individual institutions, educational and commercial, with each other. The coupling of the two depend upon individual institutional and individual company or corporate efforts. This paper addresses some of the expectations related to the mutual benefits to be obtained, and describes some examples and results of joint efforts. Some inferences for enhancing productive cooperation are made.

A number of writers have discussed educational institutions as loosely coupled systems. For an interpretation upon which the systems may be considered, a statement by Karl Weick is helpful. He indicates that "...coupled events are responsive, but that each event also preserves its own identity and some evidence of its physical or logical separateness" (Weick 1976). The application of these ideas to educational institutions is readily apparent. Within a given discipline, for example, there will be areas of study which, while distinctive, share many common bonds with other areas or disciplines. Changing environments, new discoveries or changing interpretations within one area may affect the others, particularly through the areas of commonality or interaction.

The concept of loose coupling "suggests the idea of building blocks that can be grafted onto an organization or severed with relatively little disturbance to either the blocks or the organization" (Weick 1976). Those familiar with much of the externally funded research done in American universities may readily make the analogy of research projects to the blocks, but may less readily accept the idea of little disturbance to the blocks (projects) when they are removed. In terms of the larger systems, however, the phrase "relatively little disturbance" is more easily argued. In the sense that both campuses and corporations are elements of the larger fabric of the national system they represent quite loosely coupled systems. That is, they may be either tied together weakly, infrequently or with little interdependence.

Further, universities within themselves are readily defined as examples of loose coupling and as loosely coupled systems. That is, individual elements (departments, chairs, programs) may in many instances be modified without major affect upon the whole institution. Departments or research institutes readily accommodate changes in projects, funding units or even principal investigators on both small and large research projects. Also, programmatic changes, additions or deletions of degree programs and accommodation to changed facilities occur routinely.

While not dependent upon discussion within the context of loose coupling, it is also evident that universities operate with multiple goals, some of which may cause concern for their apparent conflicts. Although institutions may be accepting of diverse goals, there are some overriding elements of institutional concerns, such as for institutional autonomy, or academic freedom, within bounds acceptable to the faculty. The relationships of these areas to coupling and coordination with the corporate sector are of substantial interest.

Corporate activity is typically concerned with outputs. That is, controls are applied to inspect how well the work is done, with the primary emphasis being on the product rather than the producer. This focus develops more singular goals and more tightly coupled events directed toward those goals. Tighter coupling may be expected within units of the same levels and focus of activity, and be looser at other levels and stages.

Weick (1976) notes that large organizations may have several loosely connected sectors with few controls. He suggests that it remains to be seen under what conditions loosely coupled systems are resilient structures. In a related discussion, he indicates that the patterning of loose and tight coupling may, over time, be the crucial determinant of organizational functioning. It has also been suggested that in organizations in which elements are too tightly coupled problems may be created (Owens 1982).

In the United States, the department is identified as the dominant unit in the university. In that context "research (rather than service or teaching) is the dominant activity within a department that shapes the structure of that department" (Weick 1983). It is in the context of research and at the department level that the campus and corporate systems may most readily develop the couplings that tie the structures together.

The need for the loose couplings which imply - at least to some degree - a system for cooperation comes from both the academic and commercial sectors. For example, Father Theodore Hesburgh (1985), President of Notre Dame University, has urged educators to maintain a high sense of commitment to win "appreciation of the connectedness of all people about the globe."

Dr. Hesburgh pointed out that corporations and Higher Education resemble each other in many ways, citing the size of the education enterprise and the functions of corporations as major educators for large numbers of people.

James L. Ferguson, Chairman of General Foods, in a session before university administrators from across the nation, decried the loss of educated citizenry represented by those who fail to complete their education. He noted that the loss of those who are classified as drop-outs "sap the strength of our society" and become a burden on national economic strength (Ferguson 1985). He suggested that much of modern education is so specific that many university graduates are unable to function outside their own areas of specialization. Ferguson suggested that attention be given to the developing of individuals for flexibility, the capacity to deal with change. The expression of need for emphasis upon developing more broadly educated persons, coming from the head of a large corporation, seemed to make a strong impression on university administrators. Another corporate representative, John McCredie of Digital Equipment Corporation, stressed the need for campus and company communication, cooperation and creativity (McCredie 1985). He described the importance of getting to know each others needs, beyond obvious direct assistance such as equipment grants from corporations and employment of collegiate products. McCredie suggested long term development of complex relationships, in which companies and campuses would cooperate in consultancies, teaching, round-table discussions and in specific research. The 1983 Professional Agriculture Workers Conference (PAWC) drew most of its attendance from land-grant colleges and federal agencies. However, fifteen percent of the participants were from corporations and foundations of the private sector (Williams 1984). While the conference was aimed primarily at the research, education, and technology transfer of land-grant colleges, the chairman of the conference noted the need to realize the wider involvement of the private sector, particularly of community level personnel. It is interesting that both corporate and campus spokesman have so recently emphasized the need for increased investigation into how people (children and adults) learn.

The involvement of private enterprise in providing employee education in the United States is important to the economic growth of the country. In fact, in 1980 employers spent for employee education roughly half the amount spent in traditional higher education. Suzanne Morse (1984) has credited this large and continuing expenditure to the need, recognized by business, government and labor unions, for a more skilled workforce. The move from the industrial age to the information age, the greater competition in commerce across the world, change in technology and increasing specialization of jobs are all factors which cause the increasing emphasis upon employee education. This education ranges from instruction in basic skills to highly technical training.

The joint values of cooperation and collaboration are currently addressed in higher education literature. The 1984 ASHE-ERIC report notes that the real task is for individual college or university administrators to find appropriate courses of action for particular institutions. While the implication is that institutions need to develop improved ways of working with adults, there is also the postulate that institutions of higher education should seek support and assistance from individual corporations. This latter approach is being vigorously pursued in various nations. Examples of the cooperation sought, and of impact upon individual faculty, collegiate programs and institutional emphases will be described.

Many institutions conduct special drives to secure funds for endowment and for special projects. Corporations are often sought as major donors. The Enterprise Campaign at Texas Tech University is one such effort. On the occasion of the sixtieth anniversary of its founding, the university initiated a three year, sixty million dollar capital fund drive. During the first year, selected corporations and foundations with a commitment to higher education were sought as primary donors. Within the first few months half of the goal had been pledged. This example indicates the involvement of a broad range of corporate entities in a state supported higher education institution.

Specific requests may be made from university representatives to corporate managers for specialized research equipment, personal computing devices, and raw materials for process research for the benefit of both entities. The college or university needs to be concerned, if successful in acquiring corporate gifts for equipment or computers for example, that avenues for provision of maintenance, security, training in using the equipment, and procedures for making them available for accepted purposes are implemented. The results may be significant. After several years of discussions by university representatives with a major electronics technology firm, an incoming dean was able to pursue the college's requests to a successful conclusion. He was able to convince the company of the mutual benefit in broadening the base of engineering students training through accessible micro-computers. The company responded with several hundred thousand dollars worth of equipment.

Involvement at the individual faculty level may be illustrated by the example of a computer scientist in an English university. An instructor in Manchester became interested in a specific company through a visit as a consultant. She proposed examination of changes in software applications, and subsequently placed a graduate student into an internship in the company for specific problem solving and monitoring. From those specific task solutions the instructor worked toward development of a theory to support transfer of the ideas. The student developed his thesis based upon approaches and solutions to real world, industry-specific problems. After transfer and testing of the theory and applications the instructor developed a paper for publication. The instructor reports that the consultancy in which she remained involved was viewed, in the English institution more than in an American counterpart, as the fabric of professional activities of faculty (Hennessey 1985). This example corresponds to a paradigm suggested by David Saxon, of the Massachusetts Institute of Technology for a larger project in which industry provides funds and intellectual stimulation and receives information and a first hand look at new graduates. A major industrial liaison program is underway at M.I.T. with two large companies, DEC and IBM (Saxon 1985).

Many institutions of higher education are actively seeking closer and more complex involvements with industry. There are frequent cautions in the literature and from the speakers on higher education in regard to those involvements. One such caution relates to proprietary developments. Concerns for maintenance of appropriate ownership and credit for intellectual property, while at the same time maintaining open inquiry, undergo extensive discussion. The development of campus and corporate couplings which will avoid improper influence by individual companies and at the same time not conflict with their profit seeking are items of serious concern in many institutions. There are estimates that three-fourths of the nation's colleges have some ties with businesses (Evangelauf 1985), and industry contributed an estimated one and one-half billion dollars to education in the past year (Descruisseaux 1985).

The large involvements and the large concerns may grow even larger. Robert Atwell, President of the American Council on Education, has stressed the need for higher education collaboration with business and labor. In his proposed agenda for the future, he notes the need for advancing higher education concerns at the national level (Atwell 1985). Amid the national interest in the coupling of campus and corporate interests, however, it remains apparent that individual efforts are important to implementation. Individuals from colleges and universities typically contact individual corporate managers to promote what are perceived to be mutual benefits. It is commonplace that several companies participate with one institution even within the same area. At Texas Tech University, for example, relationships have been developed with Apple, DEC, I.B.M. and Texas Instruments for supply of computer hardware. The companies have understood the need for multiple connections, and jointly have been intensively involved with a single department. These couplings did not occur merely by happenstance. They were directly and vigorously sought by individual faculty and administrators whose primary aims were solutions of university problems. The need for cooperation and provision of information and research data to the participating companies are understood as elements of the coupling. The posture of the university in developing the connections is important. There is a Turkish proverb which expresses that posture which is likely to attract corporate involvement. The proverb is translated simply that "An open door invites callers." The universities need to make the corporations aware that the doors are open for connections of mutual benefit.

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BUILDING BRIDGES BETWEEN THE DISCIPLINES: COLLABORATION IN AN INFORMATION-PROCESSING UNIVERSITY

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> "Nature does not present its problems
> along departmental lines."
> a former Provost of MIT [17, p.18]

Emphasis is changing among the world's leading universities from information gathering to information processing [18]. The creation of technological knowledge, a process which is at the heart of modern economic growth, requires the use of interdisciplinary teams. "Interdisciplinary activities are the principal adaptive mechanism by means of which university curricula and researches are continually responding to the changing needs of the present society and its future possibilities" [1, p.10]. A wealth of data is being generated, but the ability to organize and use that information remains limited. The infrastructure of meaning formation is bounded by a sparseness of social networks [14, p.64]. Old structures are hampering information processing.

McHenry, a former and university president, noted in the introduction to his book on academic departments that "in scholarship, as in farming, the most fertile soil may be that under the fences rather than at the center of long established fields" [15, p.ix]. As disciplines grew more isolated, it became harder for faculty to communicate with one another across academic borders. The academic department, in the United States and Europe, had been built using the paradigm of teaching discipline; research, contrary to popular opinion, had not been considered in establishing the initial framework [3, p. 31]. Emerging organizational forms within the university, such as centers and institutes, did not suffer the same disadvantage. These organizational adaptations "which decoupled the conduct of scientific research from the education of students" were being viewed as "one possible response to the threat of reduced vitality of academic science" [8, p.91]. Organized research units provided opportunities for a flexible university with inflexible academic units to adopt to a rapidly changing society, full of people demanding increased responsiveness and greater accountability. While power remained with academic departments, the future appeared increasingly to belong to evolving organizational forms growing within their shadows.

The internal structure of universities has been characterized by a high degree of segmentation. Compartmentalization sent people to solve their problems in isolation from one another and served to inhibit change across the university. As Harlan Cleveland noted "an information-rich environment is a sharing environment" [7, p.16]. Adaptations to the information-processing society will involve the development of new organizational forms that encourage collaboration while not resolving the existing tension between an emphasis on individual performance and restraints on individual performance. As John Van de Graaf concluded, "participation tends to be greater in the better-known, more productive and research-oriented universities and departments ... if any general conclusions at all can be drawn from the American experience, participation seems to be associated with greater productivity" [20, p.7].

An increase in the rates of collaboration has been well documented both within and between fields [10, p.348; 23, p.176-7]. This increase in collaboration has been attributed to such factors as patterns of funded research, specialized research technology, increased professionalization of science, and the maturation of disciplines [10, p.356]. Harriet Zuckerman, in her comprehensive analysis of Nobel Laureates, noted that "quite contrary to the twin stereotypes that scientists, especially the better ones, are loners and that important scientific contributions are the products of individual imagination, the majority of investigations honored by Nobel awards have involved collaboration" [23, p.176]. In fact, Zuckerman discovered that laureates had "consistently higher rates of collaboration at each phase of the life-work-cycle" [22, p.395]. Excellence in research was closely tied to collaboration [9, 11, 20, 22, 23]. The centrality of collaboration in an information-processing university was becoming increasingly evident. Interdisciplinarity, whether in curricular programming [12] or in emergent research activities [2], was increasingly becoming central to the information-processing society. As Herbert Simon noted, "In a world of this kind, the scarce resource is not information; it is the processing ability to attend to information" [18, p.270]. The need for teamwork in framing problems and seeing the texture of issues grows more evident in the emerging information-processing era.

Research Question and Methodology

For purpose of this study, the following research question was considered:

> What organizational responses for encouraging information processing have emerged in and around America's leading universities?

T.N. Clark noted that "various characteristics of universities and university systems influence their openness to innovation: funds, value climate, and competition" [6, p.16-8]. The higher the financial support, the greater the innovation; the more eminent the institution, the greater the innovation; the more competitive the system, the more innovative the institutions within it. Boston and San Francisco, areas in contention for supremacy of the United States high technology industry and areas containing four of the nation's five leading research universities [21], provide seedbeds for the emergence of organizational forms that might be considered as models for improving information processing. The University of California-Berkeley and Stanford University (San Francisco area), as well as Harvard University and Massachusetts Institute of Technology (Boston area) meet Clark's criteria for higher innovation. All four institutions are well-funded and prestigious, located in highly competitive research environments.

Using a case study approach, the author spent July-August, 1983 in the San Francisco area (post-doctoral study, Stanford University) and July-August, 1985 in the Boston area (associate in education-administration, planning, and social policy area -Harvard University) identifying and analyzing collaborative work structures. The results of those two summers' research efforts were initially presented in a paper to the Annual Meeting of the Association for the Study of Higher Education [11]. University committee reports and institute publications were used to identify and evaluate organizational responses found at and around these institutions. Interviews conducted during the summers of 1983 and 1985 added depth to the analysis and led to investigations of several organizations only peripherally associated with universities in the Boston and San Francisco areas that promoted information processing.

Increasingly, higher education researchers are employing the case study approach. The choice is sensible since case studies permit longitudinal analysis and consideration of cause-effect relationships. Empirical studies at the early developmental stage of higher education research need to concentrate more on generating hypotheses than on testing them. Through case study analysis, organizational forms might be identified that are worthy of consideration for replication in other institutional settings.

Findings

An examination of the collaborative work structures located in and around Stanford, Berkeley, Harvard, and MIT offers insights for improving information processing. Among the organizational models emerging are Berkeley's powerful advisory council; Stanford's enthusiastic association with independent research groups (e.g., the Center for Advanced Study in the Behavioral Sciences); MIT's broader definition of institute faculty encouraging high levels of communication between disciplines; Harvard's close ties with industry and business promoting technological development; and Abt Associates' and SRI International's use of matrix teams to address complex societal problems. Each of these emerging organizational models is built on a base of increased collaboration.

The University of California-Berkeley has been experimenting with a governance process that can help to reorder the departmental boundaries in the biological sciences so that the reorganized units are less damaging to the development of new fields of study. As a result of the problem of failing to develop strong faculty groups in newer subject areas, Berkeley leadership created an Advisory Council on the Biological Sciences as the key instrument for rebuilding biology at UC-Berkeley. The Council, consisting of nine distinguished biologists drawn from different sub-fields, exercised an authority which rested on the reputation of its members as well as on the power of the chancellor. The Council has been a mechanism for overriding departmental authority on crucial issues [19].

From 14th (1925) to 2nd (1982), Stanford University steadily advanced in comparative rank among major American universities [21]. Two independent organized research groups located near Stanford, SRI International and the Center for Advanced Study in the Behavioral Sciences, have helped to promote research vitality at the university [11]. SRI International's professional staff of over 2,000 persons representing more than 110 disciplines responds to problems via use of matrix teams; the Center for Advanced Study in the Behavioral Sciences awards up to 50 residential postdoctoral fellowships each year to people from this country and abroad who show great accomplishment and/or promise. SRI International and the Center for Advanced Study in the Behavioral Sciences are examples of independent organized research units that hover around a major research university, making it possible for faculty to interact at close range with internationally renowned academics as well as with business/

industrial/governmental representatives in the pursuit of research vitality.

MIT's broader definition of faculty encourages individuals associated with organized research units to identify themselves more closely with the institution's regular faculty, thus increasing their participation and involvement in university-wide activities. Through expanded involvement of individuals connected with institutionally affiliated centers and institutes, MIT has demonstrated an internal organizational response to the intellectual barriers between disciplines and has thus encouraged a high degree of collaboration and cooperation on campus. As noted by MIT's Committee on Research Structure, "by opting in a controlled way for a broader definition of faculty rather than accepting a static faculty bound by traditional rules of tenure, endowment, and faculty-student ratio, MIT will retain its responsiveness, breadth, and vitality which will enable it to contribute to the changing needs of the country" [5, p.119].

As one of the nation's preeminent research universities, Harvard has redirected the course of American higher education. Under the leadership of Derek Bok, Harvard has actively entered the marketplace with "consulting arrangements, industry-associate programs, patent licensing, research agreements with individual firms and groups of companies --all these afford useful opportunities to stimulate technological innovation" [4, p.35]. Most recently, Bok signed a multibillion dollar contract with Dupont. As Bok warned, however, regarding this new direction, "the causes for concern flow from an uneasy sense that programs to exploit technological development are likely to confuse the university's central commitment to the pursuit of knowledge and learning [4, p.26].

Abt Associates of Cambridge, Massachusetts and SRI International of Menlo Park, California demonstrate effectively the use of interdisciplinary teams to resolve applied research problems. These associations demonstrate the "continuous, dynamic process of the creation, bridging, and dissolution of disciplinary boundaries that requires the formulation of a dynamic model for explanation, prediction, and efficient planning" [1, p.2]. Interdisciplinary activities are thus coordinated to bridge established academic boundaries for specific purposes, in order to gain specific results. Abt Associates and SRI International demonstrate to higher education the usefulness of collaboration and matrix teams in an information-processing era. In the years ahead, as the university becomes a major force in the information-processing society, these models of collaboration will need to be considered for replication.

Conclusions and Concerns

Collaboration is needed by the information-processing society to build bridges between and among large pools of disciplinary data on the one hand and society's increasingly complex problems on the other. While the academic department remains the faculty home, the interdisciplinary research group is emerging as the workplace for the modern information-processing university. Using the disciplines as tools, the modern research team challenges the complex problems of society via focused interaction. Teamwork helps to frame the problems and to see the texture of issues with greater insight and understanding.

In view of today's need for increased creativity and risk-taking in the processing of information, the loosely coupled structure of the multiversity is an organizational advantage. As Clark Kerr noted, "The multiversity has demonstrated how adaptive it can be to new opportunities for creativity; how responsive to money; how eagerly it can plan a new and useful role; how fast it can change while pretending that nothing has happened at all; how fast it can neglect some of its ancient virtues" [13, p.45]. The strength of America's higher education enterprise lies in its diversity, ambiguity, and slack. The university's boundaries within American society grow increasingly blurred; the drawbridges across the moat surrounding the university are down. As representatives of state and federal government, business, and industry cross the bridges on the way in; activist students and faculty cross on the way out.

Wise university administrators will encourage these movements toward collaboration within and without their institutions. The modern information-processing society demands it. Faculty must be encouraged to initiate contacts, develop networks, and take risks during these times at the hinge of history. University administrators, government officials, and foundation directors should encourage faculty to come together across departmental and college boundaries. The process of transforming the massive information gathered to date into useful, integrated knowledge demands the use of interdisciplinary teams. Adaptations to the information-processing society will involve the development of new organizational forms that encourage and reward collaboration. The collaborative work structures that exist in and around America's leading research universities might serve as models for the future: Berkeley's powerful advisory council; Stanford's close association with independent research groups; MIT's expanded definition of institute faculty; Harvard's closer ties with industry and business; Abt Associates' and SRI International's use of matrix teams. Built on a base of increased collaboration, these models offer insights into future organizational forms that will respond most effectively to the needs of the information-processing society.

The time has come to consider David Riesman's call for "the recruitment of faculty... as members of collaborative teams," as well as the overhaul of our systems of selection, evaluation, and promotion of faculty to reflect the new realities of an information-processing society [16, p.234]. The information-processing university requires the use of interdisciplinary teams building bridges between the disciplines and encouraging collaboration across society as a whole.

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DEVELOPING A UNIQUE EDUCATION AND TRAINING MODEL USING INTERACTIVE VIDEODISC LEARNING SYSTEMS

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Introduction

For a number of years many universities and industrial training centers have offered quality education by combining traditional teaching methods with computer-assisted instruction and televised material, particularly in areas of minimal faculty resources. There is ample evidence that student learning is enhanced when more traditional approaches are complemented by instructional technology. Among these instructional delivery systems, the interactive videodisc represents a cutting edge technology. An interactive video system combines computerized information and question sequences with audio and video images. Specific audio and video segments are triggered by learner responses, or may be pre-selected to appear in individualized patterns which change for each learner or each assignment. This system has the best potential among all educational technologies to date because it combines quick random access to video images and accompanying sound with a self-paced student/computer interaction. It thereby stimulates student interest within a conducive learning environment.

Interactive video has been used in industry, business, and military sectors since the early nineteen-eighties; yet it is still a rarity on mainstream university campuses. The main reason for its sluggish adoption by higher education institutions is that both equipment and personnel requirements make it a very expensive medium. Computer equipment and sophisticated television studio facilities are necessary to produce interactive videodisc courseware. The production team must include specially trained personnel with knowledge of curriculum and instruction as well as technical expertise in computers and in video production. An additional problem for universities is the significant amount of faculty time which must be spent working both independently and in collaboration with the technical staff to develop courseware. Still, recent articles (1-4, 11, 12) have asserted that this technology will unquestionably improve university teaching. Specific applications of interactive videodiscs in curriculum development have been reported in such fields as nursing and paramedical instruction (5-8), and mathematics and computer literacy (9,10).

We believe that widespread use of this emerging educational technology could benefit universities in the near future. Higher education in the United States has experienced constraints as well as opportunities over the last decade and a half. Many of the circumstances of the seventies and mid-eighties are predicted to continue to the millennium year 2000. In this paper we will begin by delineating three challenges to American universities--accountability, economic partnership, and retraining. We will then argue that appropriate use of videodisc technology could help to address those three specific concerns of American higher education. Following that analysis, we will offer as a case study example our efforts at Bloomsburg University of Pennsylvania to design, develop, and implement a model curriculum and instructional program using interactive video. As our University's answer to the issues which face all of academia, this innovation promises three kinds of benefit: to improve teaching effectiveness, to strengthen mutual interests in technology with the business community, and to offer services to our external clientele. In summary, Bloomsburg's goal is to produce technologically advanced educational materials which can be used flexibly to meet various training needs both on and off campus.

Three Challenges to American Universities

(1) Accountability: Experts within education have recently published a series of studies criticizing the purpose, value, and effectiveness of the American educational enterprise (13, 14, 15). A key issue in these studies is accountability: whether institutions can demonstrate by appropriate evaluation measures that students have, in fact, developed sufficient skills and knowledge from the time spent in school. The most significant of these studies is "Involvement in Learning: Realizing the Potential of American Higher Education," from the National Institute of Education (NIE), which concludes that student involvement in the educational process is the key to institutional effectiveness and academic development.

One member of the NIE study group is the noted educational researcher Alexander Austin (16, 17), who has said that student involvement is the cornerstone of academic excellence. He argues that the traditional "Content theory of pedagogy" and the "Resource theory of institutional excellence" fail to demonstrate that student talents have been developed. Therefore, concludes Austin, these theories are insufficient to demonstrate institutional effectiveness.

In contrast, he supports the "Individualized theory," which attempts to identify the curriculum content and instructional techniques which best meet the needs of the individual student. Individualized learning methods should lead to student involvement, since they provide an active rather than a passive mode of instruction. Austin's student talent development theory is likely to have a far-reaching impact on future academic policy developments because it has captured the attention of state legislators and of accrediting bodies throughout the country.

(2) Economic Partnership: A second formidable issue for American higher education today is economic partnership: the need to support regional and national economic growth through technological research and applications. The so-called "High Technology Connection" (18) between education and business has been amply emphasized in recent years. Because secondary school systems have failed to stimulate students who are talented in mathematics and science, the United States lacks a pool of technologically-trained students and workers. One result is that over the last two decades this country has steadily drifted from its one-time pioneering position in world technology leadership. The gloomy implications of this drift are convincingly described by Botkin, Dimancescu and Sata (19), who propose a twentieth century Technology Morrill Act for higher education. A similar concern led educational and political leaders (20) in 1984 to endorse a ten point plan which emphasizes the need for establishing partnerships of education with industry, business, labor, and government.

(3) Retraining: Closely related to the discussion of partnership between education and business in support of economic growth is the third issue, that of retraining: the requirement to provide workers with opportunities for continuing education and for skills training to meet changing marketplace demands. Commentators predicting the future of our information-based economy agree that prudent employers must now expect to provide retraining for workers throughout their careers. The U.S. Congressional Committee on Technology Assessment has concluded that an employee's working life is greater than his or her productive life, that obsolescence of skill will remain a key concern in a technology age, and that there must be coordination between education and industry, between training and production. According to one estimate (21), U.S. corporations now employ 75,000 full-time trainers, and spend 10 to 30 billion dollars or more each year for training and educational programs. For example, in 1984-85, an estimated 13,000 people took part in management and technical training in

Ford's North American operations alone. Philip Caldwell reports (22) that this figure is six times greater than the number enrolled in similar training programs just a few years before, in 1981.

Numerous articles in the literature of higher education and economic development have stressed the importance of offering to workers opportunities for continuing education and retraining. Certainly in the past five years, this viewpoint has been coupled with the belief that universities must work together with business and industry in such endeavors. However, a number of barriers prevent this partnership concept from being fully realized; these include institutional rigidities, organizational differences, and limited resources of faculty time (23).

Advantages of Videodisc Technology

Academic planners who hope to anticipate and to solve problems of accountability, economic partnership, and retraining should consider the benefits of a commitment to interactive videodisc technology.

(1) In terms of accountability, this educational technology is probably the most cost-effective means of involving students in the learning process. The best of the individualized learning modes, interactive video can be justified as a learning tool which is both academically effective and, in the long run, financially defensible.

(2) Videodisc technology might serve as the vehicle to establish a successful economic partnership with business. The university may receive experimental equipment in exchange for demonstrating its capabilities; unlike hypothetical assignments, classroom projects developed through grants will have direct industrial applications; students who work on these systems will develop advanced production and programming skills, making them attractive to employers.

(3) In providing training assistance to industry, this technology may compensate -- partially but significantly -- for limited university resources. The technology which improves campus-based instruction can be provided to workplaces with equal effectiveness through the use of telecommunications capabilities. By sharing programs with business and community groups via tapes, discs, electronic connections, and satellite transmissions, universities will reach a wider audience than ever.

Interactive video technology thus provides an individualized teaching tool for universities which will unquestionably face an increasing demand to demonstrate excellence; it allows universities and businesses to enter into partnership through a "high technology connection"; and it allows cost-effective dissemination of instructional materials to an audience wider than a traditional on-campus student population.

The Interactive Video Program at Bloomsburg University:

As a progressive public university in Pennsylvania whose administration and faculty believe that educators must respond to changes in society, Bloomsburg University has extended its teaching mission by adding emerging technologies to its curriculum. Four factors have contributed to this development:

(1) Television facilities: Long-range planning at the University has for some time included provision for state-of-the-art television studios to support undergraduate and graduate classes in TV production. Beyond serving curriculum needs, the studio facilities allow videotaping and broadcast quality productions initiated by faculty independently or in response to business sector requests.

(2) Grant assistance for business partnerships: The state of Pennsylvania has created and funded the Ben Franklin Advanced Technology Partnership Program. These competitive Ben Franklin awards support collaborations between universities and the private sector in advanced technology projects.

(3) Center for Instructional Systems Development (CISD): This new facility supports the design and development of computer-based interactive videodisc courseware for interested faculty, seeks to identify and fund such projects for private sector entities through grants and sponsorships, and cooperates with the College of Graduate Studies and Extended Programs to sponsor outreach for corporate business sector training.

(4) Interdisciplinary Master's degree program for Instructional Technology: This recently established program prepares professionals seeking careers as training specialists in business, industry, or government, or as technical resource specialists in education. In addition to a background in instructional design and human resource development, the program focuses on emerging technologies with an emphasis on computer and interactive video applications.

Through this network of university support, faculty in various undergraduate colleges and the College of Graduate Studies are encouraged to create projects appropriate to interactive videodisc technology. The Director of Television Services works closely with the Director of CISD to coordinate the videotaping and editing aspects of interactive videodisc production. Since faculty in CISD are also teachers and advisors within the graduate program in Instructional Technology, both areas benefit: the graduate students identify potential thesis projects through CISD contacts; the CISD is confident of a group of graduate students well-trained and eager to work in interactive video. The Center for Instructional Systems Development at Bloomsburg University has developed a number of Level III interactive videodisc projects, both from external private sector contracts and from faculty initiatives. All projects are developed in the 512K Macintosh microcomputer system and are interfaced with the Panasonic 2024 videodisc player. Programming is done with the Mentor authoring system and the MacVideo laser disc editing system developed by Edudisc (24). The Panasonic 2023 videodisc recorder/player is used to create eight-inch optical laser discs from videotapes and slides.

One example of a significant partnership project with business involved a cooperative effort between the University and the Geisinger Medical Corporation, a regional comprehensive private health care service organization with national renown. The goal was to develop courseware for the training and retraining of nurses and physicians in critical care medicine. Three separate learning modules were developed:

(1) Ready Reference System enables nurses and physicians to access on-line information in the form of text, still and animated graphics, motion sequences, and interactive programs that generate patient profile reports and calculations from formulas;

(2) Case Simulations generates scenarios based on selections which the learner makes from a set of options;

(3) How-To-Do-Lessons demonstrate a medical procedure either for review or as a learning experience. For example, the lesson entitled "Discontinuing Mechanical Ventillation" teaches critical care nurses the procedures for weaning a patient from a respirator, for being aware of possible respiratory complications, and for avoiding and resolving these complications. This project was a graduate student's thesis project for the Master's degree in Instructional Technology.

We attribute the success of this project to the collaboration between a medical center and university, neither of which could have completed it independently. The Geisinger Medical Center staff defined and validated the content; the Bloomsburg CISD and Television Services staff created the instructional design, planned the videotaping, edited the tapes, and programmed the lessons.

Among the campus-based projects is one from the art department to convert a collection of 50,000 slides to laser disc. When combined with the redesign of five courses, this file will provide more efficient, effective, and independent art instruction. A professor in allied health sciences is converting a Medical Terminology course into videodisc; this will eventually free faculty time for research and for teaching other courses. Faculty in sociology and communication studies have proposed projects regarding emergency communciation and making correct decisions in life-threatening situations. Proposals are under way for materials in education and in nursing as well.

Two extended examples will illustrate the value and effectiveness of a videodisc learning system. A graduate assistant in the Instructional Technology program has created a lesson for use by first year chemistry students prior to their first session in a laboratory course. Learners view the actual laboratory set-up and watch the qualitative chemical analysis by which seventeen ions are separated into five major categories. This format prepares students for efficient and safe use of a laboratory, and facilitates the connection between theory and practice. Laboratory exercises using explosive and dangerous chemicals could be avoided through videodisc learning using animation and video frames of such experiments.

Another success was the graduate thesis project on teaching sign language to potential teachers of the hearing impaired. Still shots of hand motions of about 500 signed English vocabulary words have been grouped into meaningful categories and stored on optical laser disc. Now students may use a menu-driven format to preview specific words or categories of words before attending class sessions taught by their instructor; or they may review the material after class, in the absence of a teacher, by viewing the master signer tape. Experience with the system suggests that students move more quickly from basic vocabulary to complete thoughts than with the traditional method alone.

Conclusion:

At Bloomsburg University of Pennsylvania, we have developed a unique education and training model using interactive videodisc systems. This innovative strategy allows us to improve the instruction of our college student population, to pioneer in applying a new technology, and to extend the scope of our instruction to people already in the work force. We believe that by implementing this educational model, the university is responding positively to several current issues in American higher education and economic development.

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CAREER TRAINING AND
PROFESSIONAL CONTINUING EDUCATION
SHALL UNIVERSITIES RESPOND TO CORPORATE NEEDS?

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Corporate Need for Continuing Education and Training

Idealy the educational system in a country is linked to the changing needs of the society . Often the linkage slacken and educational response either slows down or diverts into odd directions . In developing countries, the formal academic curriculum and the large number of admitted students in excess of the available faculty and physical resources do not provide graduates with a useful practical profile . The strictly departmentalized nature of education molds graduates rigidly in a form which is inconsistent with the interdisciplinary nature of real life .

As the complex interaction between social, economic, and technological variables continue at increasingly faster pace; and while formal education is searching for ways and means to deal with such variables, business and industry has to assume a deeper and more active role in providing career training and professional continuing education to their employees . In many corporations training became an issue of strategic importance . In several situations training played a key role in business survival by adapting to the changing needs of society (1). More companies , realizing the sizable return on investing in training had called on top executives who are successful in other fields to handle key posts in human resources development and training (2) .

Corporate or College Training

There is a question as how far deeper will companies become involved in running continuing education and training functions . The answer may be derived by examining the principles which promote business ventures into new functions or in expanding existing functions . Very briefly such principles may be stated as follows :

- If the function fits the main line of activity of the company and agrees with the business objectives .
- If the technical and economic feasibility of the new or expanding function have been verified .
- If there is no other institution which may be entrusted to perform the function more economically,more effectively and up to the requirements of the company .

In general, there is no doubt, that the continuing education and training function is neither one of the prime objectives of business and industry nor it fits easily within their structure and functions . Though technically feasible, the economic feasibility of business involvement in such activity is still a subject of study .

From the above principles it seems that the last one is the major drive for business to venture into the continuing education and training function . This reveals the fact that educational institutions are not quite responsive to the particular corporate needs for preparing and qualifying practical professionals . In fact, over the years, the educational system has contineously drived business into ventures which are inherent functions of educational institutions .

This is easily realized since, though educational institutions talk often about their accomplishment in research . Continuing professional education and training is looked upon low as being revenue generating functions not worthy of academic respect . Until this view is changed the role of educational instituions will continue to fall short of satisfying the need for professional development of human resources in the society .

Many educational institutions, however, do feel now the social and economic pressures and realize the need to review their structure, their policies and their techniques and methods of education and evaluation in order to fulfill their role and the expectations of society . In the following some of the issues which are of concern to business and industry are being discussed .

Training Transfer

Perhaps the most pronounced concern to the sponsor of a training activity is to realize a positive measure of the transfer of training to the job . Without such transfer the outcome of a training program will go unnoticed and similar future programs are unlikely to be authorized . It is essential for progrma organizers and coordinators to plan well searched strategies for producing noticeable transfer of training. Close cooperation between corporte officers on one hand and training coordinators on the other is necessary. Training schemes have to be devised such that a professional legitimately carries his learning experience to his work environment, gets his peers and senior colleagues involued and ultimately brings measrable contribution to his job . Tailored sandwitch training is one way of achieving this end(3) . Getting the boss involved in the training as observer, advisor or evaluator or in some other suitable way was found to enhance the prospects of training transfer (4) .

The corporate role in effecting such transfer is also sub stantial . Career options need to be drawn for each job category. Individuals are to be made aware of the various options and are encouraged to develop their ability in a given career path . An element of competition between peers is thus created which improves the level of training and helps its transfer .

Corporates on the other hand should fulfill their commitment to a given career path on successfull completion of training .

Maintaining Corporate's Know-how

Most companies develop a policy for training which covers the entire human resources of the company . The policy generates strategies which aim at maintaining appropriate levels of competence in view of the contineously changing technologies . These strategies address the various job categories and specify types and average duration of training and number of employees as percent of the total in each category . The type of training vary according to the nature of the business . Generally , there is at least three types of training: induction, upgrading , and conversion training . Induction training is offered to new recruits and recent graduates . It is intended to impart to the trainee an integrated view of the practical vs. academic environment, with emphasis on the nature of the specific business. It complements formal education and accelerates the initial learning phase of a new hire by introducing interdisciplinary and practical subjects. Induction training serves also the purpose of evaluating new recruits who are placed on probation .

Upgrading training entails familiarization with new methods and techniques and diversification of knowledge . It is offered to all experienced employees on periodical basis . Priorities of subject areas are determined depending on business needs and the emergence of new developments . Conversion training is gaining increasing importance due to the frequent changes in technologies, corporate diversification and expansion , and conversion into new trends .

Cost/value of Training

This is one of the issues which are relatively difficult to assess quantitatively . However corporate executives can make decisions on policies concerning continuing education and training only if this factor has been reasonably defined . Generally, training cost includes direct training expense such as course fees and related travel and lodging expense . Also , lost productive time and expense of training adminstrative staff . The relative values of those items vary depending on circumstances . The value of training is estimated taking into account elements such as increased efficiecy , improved productivity, reduced lost time and material, captured opportunities and improved work environment .

Sheppeck and cohen(5) outlined a system for analysing cost/benefit of training based on replacement cost of employees .

In general, the literature on cost/value analysis of educational activities is scarce (6) . An area which is of utmost significance to corporate policy makers and sponsors .

Trainee Selection

In order to realize satisfactory outcome from training in terms of transfer and cost effectiveness it is necessary to make the proper choice of trainee participants in a given training experience . Quite often corporate nominations are influenced by biased personal views , hasty decisions , or concern for job performance in the absence of a key employee when sent away on a training period .

Those factors could result in nominating a wrong person for a training program . Some corporations follow a self-nomination scheme for certain job categories . However , the gab between what an employee "wishes" to be trained for and what he or she is "prepared to" or "capable of " being trained in,needs to be as narrow as possile in order to achicve corporate objectives.

In all cases an outside objective view on the selection of trainees should enter into the decision making process by corporate executives when making nominations for training .

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INSTITUTIONAL CHANGE AND LIBERAL LEARNING

THURSDAY, 17 JULY

1400 - 1530

BRIDGING THE GAP BETWEEN TEACHING, RESEARCH, AND COMMUNITY SERVICE

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Community service is an important part of the mission of most urban and land grant universities in the United States. Both political indebtedness to the sponsors of such universities and a moral commitment to improving the quality of life in their surrounding communities lead administrators to expect faculty to engage in public service. Nonetheless, faculty in public universities often find that pressures for excellence in teaching and scholarly research preclude significant public service. The purpose of this paper is to illustrate an approach to public service that enhances rather than diminishes fulfillment of teaching and research objectives.

There are clear and compelling reasons for faculty to reexamine the potential of community service to enhance their roles as educators and researchers. Professional service to the community can often lead to extension of the classroom experience into human service agencies. Students can gain insight from ongoing social service activities even as they contribute to them. Contacts made in the course of community service involvement not infrequently lead to jobs after graduation. Faculty involved in community service also identify practitioners who are potential guest speakers and contributors of resources for teaching. Professional contacts made in the course of community service activities can lead to deeper understanding of substantive issues and to possibilities for furthering faculty research.

The Homelessness Project

Homelessness is a social problem of growing magnitude. Recent increases in the numbers of homeless persons in the United States, and changes in the prevalence of particular problems in the homeless population have strained severely the capacity of existing social service agencies. As government and private service providers have struggled to respond to these strains, the University of Massachusetts at Boston has become an important source of resources, advice and technical assistance.

The Graduate Program in Applied Sociology at the University offers courses in social policy, applied research, social problems, and human services in medical, correctional, and other settings. The degree program is more fully described elsewhere (Garrett and Larson, 1983; Larson and Garrett, 1985). In 1984, one of our students approached faculty for assistance with the computerization of client records at one of the large shelters serving Boston's homeless. As one aspect of responding to the increasing numbers of shelter users, computerization offered the promise of increased efficiency in direct service provision and of improved reporting of client characteristics for shelter management and government policymakers. However, without the level of staff or financial resources required for implementing modern information management methods, the shelter could not proceed on its own.

Establishing a Relationship

While research projects structured along traditional lines often begin with a formal research agreement, a service project that is also oriented to teaching and research concerns can require a longer and more careful beginning. If students as well as paid research staff will work on the project, involvements will be more intense than is often the case. Meetings with agency managers to plan out the project must be supplemented by meetings with staff to generate a sense of involvement and a feeling of commitment.

Underlying tensions between the goals and resources of the practitioners and the academics are likely to emerge in this period. While researchers must subscribe in at least some measure to the goals of the initiating agency, academic concerns over data of publishable quality and of potential theoretical relevance cannot be ignored. A willingness by the researchers to accommodate to sensitivities and needs of the practitioners must be complemented by practitioner recognition of the legitimacy of academic motivations. Without such accommodation (and it may not be forthcoming when dealing with issues that are at the center of political conflict), the project probably will not, and probably should not proceed.

It is often easier to submerge competing agendas in a flurry of mutual praise than to evaluate them openly. It is often easier to plunge into the reduction of hopelessly deficient data than to write off a potential source of "numbers" and perhaps a major agency information deficit. These failures to confront problems openly, however, will inevitably cause problems at later stages.

These difficulties emerged in the homelessness project. They were resolved at least partially through an agreement by university researchers to generate reports directed to agency concerns and agency agreement to allow the researchers to publish study findings in academic journals. In the face of existing case records that only partially met research criteria, a plan was also adopted to computerize only a portion of extant records and to concentrate project efforts on designing a new more rigorous instrument for future data collection by shelter staff.

Many problems can be avoided by committing the agreements worked out at this stage to writing. In addition to project goals and methods, issues of confidentiality and ethics in the use of human subjects, timetables for interim and final reports, foci for data analyses, and rights to review and even reject research results should be agreed to. While some of these agreements may be renegotiated when problems arise, a formal starting point is indispensable. Verbal agreements quickly lose their value when political or academic pressures on either of the parties increase, or (as happened in the homelessness project), a principal to a verbal agreement resigns.

These agreements are only one portion, albeit it a vital one, of the initial relationship. Building trust with staff, clients and others who will have contact with the project will prevent the inevitable minor disputes that arise when the project is in place from blossoming into major crises. Only a few meetings with staff and some quiet personal conversations create resources that are important particularly in agencies that do not use a bureaucratic management style.

As in most human endeavors, money can be a lubricant that mitigates a wide range of problems. Few social agencies or universities in the 1980s can afford to spend substantial sums on innovative approaches to social needs. Development of a research project, even one that has a heavy service component, can be considered complete until all possible funding sources have been explored. The National Institutes of Health BioMedical Research Grant secured for the homelessness project allowed a flexibility and commitment on the part of university researchers that proved critical in accommodating to the discrepancies between academic timetables and agency needs.

Developing the Project

Following formal approval, social connecting, and funding, the project can begin. The principal task of the homelessness project was developing a new system of collecting intake information from clients to facilitate computerized data processing. In tandem with this work, a large sample of existing intake records was coded and analyzed, and supplementary data from nursing records and daily census sheets were collected. As new intake procedures were developed, a separate validation study was conducted with a subsample of shelter guests. Ongoing work with shelter staff also led to identification of new data collection needs and preparation of additional reports.

Applied Sociology graduate students have made multiple connections with the project. Some have worked as research assistants at the shelter and others have entered data obtained from the shelter at the University. Several students have satisfied a semester-long internship requirement with placements as assistant case managers at the shelter. Two students have already developed thesis projects out of their shelter involvements.

Although the homelessness project has been integrated into several existing courses in the curriculum, it has played a major role in two graduate courses.

> Computer Applications in Social Analysis. In this course, students learned the logic and techniques of data processing by aiding in the process of coding intake records. Coding instructions were developed in class and students coded and cleaned data for some assignments. Students had to confront the problems that frequently occur in field-based projects, as the poor quality of nonprofessionally designed data collection instruments create difficult problems for data analysts. As a a new intake instrument provided a solution to these problems, modern techniques of questionnaire design came to have more than academic value.

Interviewing. A second phase of the project involved interviewing a subsample of guests to assess the validity of questions being developed for the intake instrument. This work was integrated into a graduate course in interviewing. Students used the shelter as a site for practicing observational skills, constructing an interview schedule, and applying interviewing techniques. A report prepared from the interview data provided important guidance for work on the intake instrument.

Involving students, even at the graduate level, in a project that already combines the goals of research and service is not without its costs. In fact, most shelters in the Boston area long ago adopted a policy of not allowing students to conduct research projects in them in order to prevent guests from becoming the new laboratory guinea pigs of enterprising students. Only when student interests were integrated with the shelter needs underlying the service project was it possible to relax this barrier.

Student involvement in sensitive human subjects research cannot occur without additional human subjects review and should not occur without close faculty supervision and training. Variations in student ability and commitment and differing reactions to students and mature researchers require extra attention to staff and subject sensitivities. These requirements, as well as the need to integrate student work with project development constrain student efforts and necessarily limit their opportunity for originality. It is the greater exposure to and insights into the needs and problems of human clients that may justify making such tradeoffs.

As a research topic, homelessness has attracted considerable attention among sociologists and others in the medical, psychiatric, and policy fields. The ongoing homelessness project provided an opportunity for making multiple contributions to the literature being produced in each of these areas. Initial research objectives included: examining the medical status and health problems of Boston's homeless; comparing the characteristics of this sample with research profiles from earlier studies; evaluating the effectiveness of intervention strategies; examining factors related to service utilization by homeless persons; understanding the etiology of health problems among the homeless; and analyzing alcohol and drug-use histories of the homeless.

Reports prepared with project data to date have helped to achieve each of these goals (see References). The differential needs and backgrounds of homeless persons with psychiatric, alcohol, and other problems have been identified. Similarities in the guests served by the different shelters in the area have been identified. The patterns of frequency of shelter use have shed valuable light on the social preferences of the homeless. Although the project with a greater commitment to the use of available data and a lesser attention to established measuring instruments than would have occurred in a traditional research project, the multiple data collection possibilities generated by the project and the ongoing longitudinal data obtained have led to development of the most extensive database currently available on the homeless. Statistics obtained from project data are comparable to those obtained in traditional studies and indicate the value of establishing such service projects.

Interfacing service, research, and teaching needs has generated other opportunities. In addition to the success of the homelessnes project in generating a significant database on the homeless, it has also led to some measurement and other technical innovations. For example, staff feedback obtained in meetings with the researchers led to the development of new questions on experiences of abuse on the streets. Measures of financial resources and of experiences with service agencies have been refined. Students involved in the project have made unique contributions to the needs of particular groups. One graduate student, for example, focused on veterans in her thesis project, and was able to contribute suggestions to government officials who sought to develop new programs for the large numbers of shelter users identified as veterans in project reports.

Toward a Long Term Relationship

In the early planning stages of the homelessness project, considerable attention was given to facilitating a long-term relationship with the shelter. The value of the relationship for the Graduate Program in Applied Sociology as well as the advantage of having longitudinal data called for more than a "one-shot" strategy. This perspective has succeeded in contributing to scholarly, teaching, and service objectives. Training of staff personnel in use of the intake instrument developed in the course of the project improved data quality, and also gave staff a sense of strengthening agency operations and contributing to governmental policymaking. Student interns as well as staff meetings and research reports have played a key role in maintaining a sense of project accomplishment.

Involvement in shelter operations has aided students over the long run in ways that extend beyond learning benefits. Involvement in the shelter has helped students to make connections with prospective employers and to add a highly visible project to their resumes. University contact with shelter staff as well as publicity generated by project reports have also helped to recruit new students for the graduate program.

Commitment to a long term relationship requires a willingness to change and an openness to new opportunities. In order to relieve data processing requirements imposed on project assistants, as well as to improve shelter operations, a joint university-shelter effort is being made to secure funding for a microcomputer system to be installed at the shelter. This will allow computerization of a higher fraction of agency records with greater efficiency and improved accuracy.

The shelter project has also enabled the university to cosponsor a national conference on homelessness with the Harvard Medical School and the Massachusetts Executive Office of Human Services. The conference will highlight the urban service mission of the University of Massachusetts at Boston and provide an opportunity for the project to benefit from and contribute to the developing scholarly literature on homelessness and associated policy initiatives.

The merger of service, scholarly, and educational objectives creates both constraints and opportunities for social scientists. While this strategy cannot substitute for the more aloof and less reactive approach in conventional research, it generates new opportunities that are needed particularly in an era of diminished funding for conventional research. This innovative approach to achieving the three major goals of the public urban university should become an essential element in the work of academic social scientists.

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DEVELOPMENT AND INCENTIVES FOR GENERAL EDUCATION FACULTY

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INTRODUCTION: THE PROBLEM

Most universities in the United States make a clear distinction between education in a given specialty (known as "major" or "specialist" education) and the more basic, broader education known as "liberal" or "general" education (in this paper we shall refer to it as "general education" or GE). A number of national reports on higher education in the U.S.A. have recently stressed the need for all college students to receive an excellent general education along with their major (specialized) education.[1] Most of our educators agree on the need for GE as well its rough outlines: basic skills in English composition, mathematics, critical thinking, and foreign language; some awareness of western or world history; and a general familiarity with basic concepts in the humanities, natural sciences, and social sciences.

What has been less thoroughly discussed, however, is how to arrange for good teaching in GE courses when most university teachers are trained, hired, and rewarded as specialists. Most professors were trained by specialist graduate schools and hired by specialist departments. Thereafter, professors' tenure, advancement, and salaries are largely determined by faculty and college committees which tend to reward specialized research and publishing rather than teaching.[2] The result is a university of narrow specialists who have few institutional incentives for teaching general education courses and who would be largely ill-prepared to teach these courses if they did care to do so. The challenge of GE program administrators is a dual one: how to motivate professors to teach general education courses, and how to increase the competence of those who do choose to teach them.

REVIEW OF LITERATURE

A cursory review of the literature on faculty development indicates that the most common tactic is to organize meetings of professors to compare ideas, techniques, and approaches. Such meetings may be as elaborate as in-service training courses provided for professors and lasting a whole term.[3] Other more informal programs include weekly luncheons[4], monthly workshops to provide "sympathetic and perceptive criticism"[5], or simply the provision to the faculty of free reading material related to GE course development in the hope that this would lead to unstructured discussions of GE issues.[6]

Another approach to GE faculty development is the evaluation of faculty and curricula. Some advocate providing a consultant to each professor who requests assistance. The consultant attends the professor's class and then offers a confidential evaluation with suggestions for future development. Such a consultant may be provided by the college of education[7], or by a separate instructional development staff.[8] Boles et al. suggest that all new courses be evaluated early and often.[9] However, McKeachie warns that callously-handled external evaluations can decrease faculty effectiveness by lowering intrinsic motivation.[10]

Individual faculty development has also been attempted through a range of experiences outside of normal faculty specializations. Pomona College has a program of leaves every seventh year or seventh semester to encourage the faculty to venture outside their usual specialties.[11] Hope College provides summer study programs to increase faculty performance in the classroom and out.[12]

A number of approaches have been suggested to improve intrinsic incentives for college-level teaching. Bradford College gives released time and summer stipends to professors who would develop new courses.[13] The University of California at Davis offers development awards for faculty to develop new courses to meet higher standards.[14] McKeachie suggests increasing the satisfaction from teaching by encouraging small classes and by giving professors the opportunity to interact with students beyond the "one-term period."[15] The Psychology

Department at the University of Michigan allows its faculty their preference in what classes they would like to teach.[16]

In addition to the above intrinsic incentives, recent writers devote considerable attention to financial rewards as a means of faculty or program improvement. The most common tactic here is "merit pay"--monetary remuneration directly to teachers for "quality" work. Despite the prevalence of such practices, there are a number of difficult legal questions involved in merit pay,[17] and most commentators denounce the present systems.[18]

Most authors reject merit pay systems because college professors are generally motivated (in their work as well as in their initial career choice) by "intrinsic" rewards rather than "external" (i.e., financial) rewards.[19] The intrinsic reasons for teaching are so strong, suggested one author, that the task of making external motivations powerful enough "to duplicate the effects of trust and intrinsic rewards" is presently too complex for resolution.[20] Several authors expressed the need for clearer goals and priorities for institutions in order to make faculty assessments and rewards less arbitrary and more meaningful.[21] The means of evaluating faculty must be carefully considered because of the legal, moral, and practical need for equity in the distribution of financial rewards. Nearly all agreed that the rewards ought to be based on several different criteria, including experience and training of the educators, student performance, and external (i.e., colleague, employment community, and accreditation board) assessments of the quality of the faculty and institution.[22]

A number of incentive systems focus not on individuals but on much larger units. The state of Tennessee has recently chosen to award funds to its public universities according to their performance on several indicators of academic excellence.[23] It is entirely possible that such performance bonuses awarded to larger units may provide as much incentive as those awarded directly to faculty members.

To sum up all the above, development strategies for GE faculty could include courses or other meetings, external evaluations, and various intrinsic and financial incentives. Financial incentives must be carefully handled, and there is evidence that we could improve both the goals and methods of such extrinsic rewards.

GE FACULTY DEVELOPMENT AT BYU

Brigham Young University has instituted programs of in-service GE seminars, continuous peer review of GE courses, and research awards for superior teaching in the GE classes. These programs may represent cost-effective approaches toward solving the twin problems of inadequate incentives and competence among faculty teaching GE courses.

BYU faces the same problems as do most other American universities in regard to faculty hyper-specialization: as long as faculty are trained in specialist graduate programs and hired by specialized departments for their particular needs, there will be difficulties getting faculty with the breadth of training and interest needed to make a quality general education available to our students. In order to broaden our general education faculty, our GE office has periodically sponsored on-campus seminars to improve the general education of faculty who teach General Education courses. These seminars have been of two types: The first are week-long summer seminars presented by well-known scholars, usually from outside our university. The lecturers are chosen on the basis of their ability to articulate broad issues which cut across disciplinary lines and which will help to give our faculty additional breadth and perspective to aid their teaching. Participants are required to attend all sessions (which usually consist of five half-days, often 9-12 a.m.) and to complete a substantial reading assignment for which they receive a small stipend (about $200). The morning sessions are usually followed by a cafeteria lunch--paid for by the GE Office--which provides an opportunity for informal discussion of the issues and opportunities to socialize. Our week-long GE summer seminars have included such subjects as hermeneutics, philosophy of science, critical reading, world history, history of philosophy, the national reports on higher education, cinema art, and evaluating student writing. Although such seminars require some resources, they are relatively inexpensive per faculty member, since each seminar is attended by 25-40 participants.

The second type of seminar is held on a single day (usually Saturday mornings) and is devoted to special topics associated with teaching. No reading assignment is required of participants, and a small incentive in the form of a $15 bookstore gift certificate is extended if the seminar is held on a Saturday morning. These shorter seminars have included the following topics: large group instruction, managing student writing assignments, the national reports on higher education, and assessment of teaching. Time is usually provided for a break and light refreshments in the middle of the sessions, but since the numbers of participants attending these seminars are generally larger (40-60), the opportunity for social interaction is necessarily curtailed. However, the cost per faculty member is very low, and participants rate them as fairly effective.

In order to measure the impact of these seminars, in the spring of 1985 we surveyed all our GE faculty, which number about 300. Of the 208 who responded to our survey, 93 had not attended a half-day seminar and 113 had not attended any of our week-long seminars. Of those who had attended our longer seminars, 33% reported them to have had significant impact on their teaching. A similar fraction (31%) of those who attended the shorter (half-day) seminars reported significant impact. Of those who had attended our longer seminars, 61% responded that the experience was "personally enriching." Of those who attended our shorter, more practical seminars, 50% found them "personally enriching." Evaluations taken immediately after the seminars and other anecdotal indications are generally positive.

The BYU faculty in-service seminars appear to have a significant impact on the GE teaching of those who attend. More importantly, they provide a forum for faculty to meet and discuss questions of common concern to teachers across a wide spectrum of the university. Considering the good effect this in-service development program appears to have on faculty competence and morale, the modest costs of this program appear to be well worth while.

FACULTY REVIEW OF GE CLASSES

Like a number of other universities, BYU has established a faculty committee which reviews our GE courses. Our committee, called the Faculty General Education Council, is a permanent standing committee composed of five senior faculty members whose only task is to review all new and old GE courses and to make occasional recommendations on GE policy. The Faculty GE Council has full and final authority to decide which courses will be approved to meet the established GE requirements. Review of each course requires extensive documentation including syllabi, examinations, grades given, workload, student evaluations of the course, biographical sketches of the main instructors, and descriptions of extra tutorial help available. A significant number of courses have been excluded from the GE list, but perhaps as importantly, a large number of GE courses have been drastically revised and improved due to direct or anticipated pressure from the Faculty GE Council.

FACULTY INCENTIVES FOR TEACHING GE CLASSES

The most important factor in course quality is the quality of faculty assigned to the course. However, like most American universities, BYU does not sufficiently reward good teaching in general education classes. Numerous faculty members (including excellent researchers) have complained to us that, while good teaching receives frequent lip service, in fact research and publishing statistics carry far greater weight with the department and college committees which make decisions on faculty financial rewards. A recent GE Office survey of our faculty teaching general education courses indicates that they believe it is not generally in their professional interest to teach such courses. Faculty participating in the survey indicated that assignment to teach a general education course has a neutral (47% of respondents) or slightly negative effect (23%) on professional advancement if one considers such factors as demands on time, personal intellectual stimulation, etc. Furthermore, the respondents indicated that excellence in teaching a general education course would have no effect (41% of respondents) or at most, a slight positive effect (23%) on promotion and salary decisions. In short, as a university we are committing the classic managerial error of "rewarding X (publication) while hoping for Y (good teaching)," although good teaching is the *sine qua non* of our profession.

To redress this, our GE Office has recently received approval to award a new distinction--the Alcuin[24] General Education Award--for excellence in teaching general education courses. Nominations for the Alcuin GE Award are made throughout the University community, but require the endorsement of the department chair and the dean of the nominee's college. Selections are made by the GE Office, with advice from the Faculty GE Council; the criteria are excellence in classroom teaching, currency in one's academic field, and support for general education. About 25 Alcuin GE Awards will be selected this academic year, spread over the colleges in a manner roughly proportional to the general education load carried by each college. These designations will be awarded for a five-year period, whereafter the individual could be designated again in open competition. Following the initial year, a smaller number of selections will be made annually to maintain the pool at a stable number.

Each semester that an Alcuin GE Fellow teaches one or more general education classes, a research grant of $1,000 is made to the individual's department. While the money is administered through the department, the grant will be associated with the name of the designated faculty member, who receives a letter indicating that the money has been given to the department as a result of his distinguished contribution to general education. Purposes for which the grant could be used could include the following:

1. Improvement of general education courses. Examples might be to help pay for readers if additional writing were required of students in a general education course, to subsidize improvements in testing and evaluation, to develop audio/visual aids, to provide time for faculty reading related to a general education course, etc.

2. Faculty time to develop team teaching or for new teachers to understudy in the classes taught by more experience teachers.

3. Research support for Alcuin GE Fellows to help balance the extra time invested in general education courses, so that excellent teachers qualify for rank advancement. The support could take the form of books, supplies, travel, student help, etc.

Department chairs have the final decision as to how the money is used, but it must reward or promote excellence in teaching GE classes. The Alcuin GE Award serves to recognize good teachers and encourages administrators to assign them to teach GE classes. The sums involved are enough to provide real incentive, but since they were merely diverted from regular research budgets, the out-of-pocket costs to the university are negligible.

CONCLUSION

While the American academic community generally agrees on the importance of GE programs, our professors too frequently lack both incentives and competence to teach GE classes. A review of the literature indicates that development strategies for GE faculty could include courses or other meetings, external evaluations, and various financial incentives. Brigham Young University has instituted programs of in-service GE seminars, continuous peer review of GE courses, and research awards for superior GE teaching. These programs may represent cost-effective approaches toward solving the twin problems of incentives and competence of GE faculty.

ENDNOTES

[1] Integrity in the College Curriculum: A Report to the Academic Community (Washington, D.C.: Association of American Colleges, 1985), pp.1-26; see also William J. Bennett, To Reclaim a Legacy: A Report on the Humanities in Higher Education (Washington, D.C.: National Endowment for the Humanities, 1984).

[2] Integrity in the College Curriculum: A Report to the Academic Community (Washington, D.C.: Association of American Colleges, 1985), p. 37.

[3] Gerald M. Mager and Betty Myers, "A Personal Approach to Instructional Development," Improving College and University Teaching 28 (Spring 1980):52.

[4] W. J. McKeachie, "Motivating Professors to Teach Effectively," in New Directions for Teaching and Learning, J. L. Bess, ed. (San Francisco: Jossey-Bass Publishers, 1983), p. 8.

[5] Joseph Marchesani and Margaret M. Cold, "If Two Heads Are Better Than One," The College Board Review 131 (Spring 1984): 25-27.

[6] Jerry Gaff, General Education Today (San Francisco: Jossey-Bass Publishers, 1983), p. 71.

[7] Mager and Myers, p. 53; see also Bergquist and Phillips, p. 69.

[8] Gaff, General Education Today, p. 125.

[9] Boles, et al., "Lessons Learned the Hard Way: The Making of a New General Education Program at Bradford College," Liberal Education 70 (Winter 1984): 381.

[10] McKeachie, p. 8.

[11] Robert T. Voelkel, "Encouraging Faculty Learning: A Program of Study Leaves" in Effective Approaches to Faculty Development, William C. Nelsen and Michael Siegel, eds., (Washington, D. C.: Association of American Colleges, 1980), p. 16.

[12] David Marker, "Improving the Scholarly Climate on Campus Through a Program of Small Grants" in Effective Approaches to Faculty Development, William C. Nelsen and Michael E. Siegel, eds., (Washington, D. C.: Association of American Colleges, 1980), pp. 11-13.

[13] Boles, p.381.

[14] Mayhew, Wick, Hoffman "Beyond Breadth: General Education in the Research University," Liberal Education, 70 (Winter, 1984), p. 398.

[15] McKeachie, p. 12.

[16] McKeachie, p. 12.

[17] See Frank W. Shaw, II, "A Summary of Legal Implications of Teacher Evaluations for Merit Pay and a model Plan," Educational Administration Quarterly, 21, No. 1 (1985), 51-69, and William S. Brown, "Performance Review Instruments and Merit Pay Programs in an Academic Environment," Journal of the College & University Personnel Association, 35, No. 1 (1984), 7-13.

[18] W. I. Griffith and Dail A. Neugarten, "Rewarding Teacher Excellence: Organizational Issues and Obstacles," Teaching Sociology, 12, No. 1 (1984), 79. See also William J. McKeachie, "Financial Incentives are Ineffective for Faculty," in Academic Rewards in Higher Education, eds. Darrell R. Lewis and William E. Becker, Jr. (Cambridge, Mass.: Ballinger Publishing Company, 1979), pp. 3-20.

[19] McKeachie, "Financial Incentives," pp. 6-8, 20.

[20] Wayne J. Kirschling, "Conceptual Problems and Issues in Academic Labor Productivity," in Academic Rewards in Higher Education, pp. 129-30.

[21] See Dennis Jones, "Budgeting for Academic Quality: Structures and Strategies," and Trudy W. Banta and Homer S. Fisher, "Performance Funding: Tennessee's Experiment," both in Financial Incentives for Academic Quality, pp. 15-27 and 29-41, respectively, and Kirschling, p.113.

[22] See Brogue and Brown, p. 124, Banta and Fisher, p. 30, and Shaw, p.61.

[23] E. Grady Bogue and Wayne Brown, "Performance incentives for state colleges," Harvard Business Review, 60, No. 6 (Nov./Dec. 1982), pp. 123-28.

[24] This award is named for the brilliantly innovative teacher Alcuin of York, who brought to Charlemagne's court his learning of the scriptures together with the Classical world's seven liberal arts. He played a key role in the Carolingian renaissance, one of the main tributaries to the Renaissance proper. His comments on the difficulties of teaching Charlemagne's ignorant and rustic nobles and churchmen should give heart to teachers of contemporary undergraduates.

THE WORLD IS OUR CAMPUS: IMPLEMENTING A WORLD CIVILIZATION REQUIREMENT AS A MEANS OF PREPARING STUDENTS FOR LIFE IN THE "GLOBAL VILLAGE"

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INTRODUCTION: THE CURRENT DEBATE

In a short, pithy volume published in 1973, the eminent British medievalist R. Allen Brown took a fellow countryman--a Minister of Education--to serious task for daring to suggest in public that it was more important for school-children to know "all about" Vietnam than the Wars of the Roses. His criticism struck at what he termed "two of the heresies of our philistine age," namely, a belief that it does not matter what you study, so long as you study it, and that the most recent, the most modern, period of history must always and of necessity be the most relevant to our understanding of the present."[1] He lamented the fact "that in our schools and Universities, where history is taught, the blind now lead the blind--over the precipice, like Gaderine swine, squealing 'Ho-Ho-Ho-Chi-Minh.'"[2]

Brown was clearly responding to the tenor of an era, when nightly, scenes from Southeast Asia were brought into homes throughout the world by electronic and space technology, and strange-sounding names became almost household words. But, in raising an outcry against what he perceived as an unwarranted and undesirable shift in educational priorities, he perhaps inadvertantly gave tacit recognition that events occurring half-a-world away were impinging directly and immediately upon Western civilization, more particularly upon a traditional curriculum, and that curriculum was having to defend itself against charges of non-relevance to the contemporary world in which global issues seemed more vital than mere national ones.

The challenge of preparing students for a greater understanding of and participation in this global village has been declared central to the task of American colleges and universities in the latter half of this present decade,[3] and conferences and workshops have been conducted to discuss ways of implementing this type of program.[4] While this call for greater emphasis upon non-Western civilizations and for finding commonalities in the human experience is certainly not new,[5] it has provided for vigorous discussion at a time when the entire structure and content of undergraduate curriculum is being considered.

While Gaff reports that "virtually all colleges and universities offer some courses that include international dimensions," he further notes that the global perspective on all studies is the widest and most neglected frontier of U. S. educational reform. He calls for "comprehensive programs that involve the content and structure of the entire curriculum" as a solution to this problem.[6] This ambitious recommendation, as laudable in its scope as it is problematic in its implementation, is most likely to be tabled in favor of other approaches, however.

The participation of educators representing some fifty-two universities, colleges, and community or junior colleges at the Conference on Teaching World History (1982) is an indication that considerable interest exists for extending or infusing a global dimension into the curriculum. But the responses to a course structure questionnaire by those attending the Conference on the Teaching of Western and World Survey Courses (1985) makes clear that there has been no wholesale abandonment of the Western-oriented survey in favor of a "global" one.[7] Nevertheless, Professor Richard E. Sullivan's summary of the conference makes the perceptive observation that while "a head count of the participants would have shown a majority still supporting a Western civilization survey," the "strongest voices, the most cogent arguments, the most persistent advocacy were in my judgment for the world history survey." He concluded that "as the proceedings of this conference circulate, . . . one of the prime messages conveyed to our colleagues across the country is the necessity--perhaps even the urgent necessity--to consider developing a world history course as a substitute for a Western civilization course. Those who opt for a Western civilization course despite this message will have certain misgivings about their decision because of this conference."[8]

A WORLD CIVILIZATION REQUIREMENT AT BRIGHAM YOUNG UNIVERSITY

Discussion of these issues on a national level reflects a similar debate which has gone on for many years at Brigham Young University. Located in Provo, Utah, BYU has a studentbody of nearly 27,000 daytime students and is the largest privately-owned, church-related university in the United States. Current figures indicate that 94.5% of that number come from the United States, and of these the preponderance come from the Intermountain region of Utah, Idaho, Arizona, Colorado, Nevada, New Mexico, Wyoming, and Montana. Yet, these statistics alone would give a very distorted view of their exposure to other cultures, languages, and religions, for 11,575 men students and 1,206 women students have spent 18-24 months as missionaries for the Church of Jesus Christ of Latter-day Saints, the sponsoring institution for BYU.[9] Several hundred students also participate each year in semester-abroad programs in Vienna, London, Jerusalem, and Spain, travel-study programs, and performance group exchanges. There is some justification to the sign displayed prominently at the entrance to the university that "The World is Our Campus."

There are times, however, when some feel that this should be reworded to say "The Campus is Our World," implying that despite exposure to many parts of the world, our students still lack the ability and vision to see beyond rather narrow issues. The motto thus remains as a challenge to us as we seek to broaden the perspective of our students and prepare them for meaningful participation in a global society.

Like many colleges and universities in America, Brigham Young has experienced sweeping changes in its general education program during the past several years.[10] While the question of some sort of civilization requirement as part of that program was discussed, the decision was made to introduce other priorities at that time and progress more slowly with the civilization requirement. There is, however, a strong belief at BYU that all students need some more integrating experience, one which encompasses both non-Western and Western cultures. In working toward this end, the General Education office has led out. In 1982 it approached the Departments of History and Humanities/Comparative Literature/Classics to consider the possibility of developing a cross disciplinary, two-semester sequence in Western or world civilization. The History Department already offered a two-semester course in world history, while the Humanities Department taught a two-semester sequence in Western culture. The idea was to see whether they could develop a course in which the humanities were more solidly rooted in the political, economic, and social currents of the time.

The results of the collaboration are at present a two-semester sequence in the history of world civilizations from c. 3500 B. C. to the present, taught jointly by specialists in history and the humanities. The courses present in both chronological and thematic ways the major sweep of Eurasian civilizations, focusing on such issues as the mythopoeic mind versus rationalism, the impact of religion, war, and technology upon culture, the shifting roles of women, and the aesthetic accomplishments of discrete cultures, set against the backdrop of political, economic, and social developments.

Although there is strong support from the provost of the university down through the dean of GE for some sort of Western or world civilization requirement at Brigham Young, experiences of the 1970's have taught us that it would be imprudent simply to impose such upon the students and faculty at this time. Instead, the thought has been that of developing several civilization sequences to the point where they are clearly superior products, and then of moving toward the requirement.

An important step in this policy of gradualism was the decision made by the GE office and the Faculty General Education Council in June, 1983, to actively promote a number of two-semester civilization sequences to our students. These sequences were expected to provide a coherent introduction to some significant range of Western or world civilization, to be sufficiently broad as to help students understand the development of the cultures and societies of the modern world, and to provide an intellectual framework for relating significant cultural and/or social patterns through many historical periods. Under this definition, two-semester sequences in history, humanities, and philosophy were approved, together with the cross-disciplinary course in world civilization.[11] At the present time, the departments of English and Humanities are also working to develop a sequence in world literature.

The present courses are not without their critics: faculty from the College of Social Sciences have denounced the efforts as political maneuverings by certain departments, have expressed concern for the lack of attention to their areas of study, and have argued for inclusion of human societies for which there are no written documents. The GE office has responded somewhat slowly to the specifics of these criticisms, realizing that humanists and social scientists do need to draw closer together and to assist one another in this task.[12] It has also encouraged members of the College of Social Sciences to develop a sequence of courses which would address the major issues of world civilization from their perspective.

The GE office has also not hesitated to use its resources and influence to develop a consensus within the university community. As part of an annual program of faculty enrichment, it arranged for William H. McNeill to present a week-long seminar on World History to a group of forty faculty members from various disciplines during the summer of 1983. Attending this seminar were faculty from the Colleges of Fine Arts, Religious Education, Social Sciences, Natural and Mathematical Sciences, Biology and Agriculture, and Humanities. This proved to be a great experience, both for the "true believers" and for the doubting Thomases. It demonstrated at the faculty level what we hope to accomplish at the student level as well, namely, that human experiences and human knowledge need to be integrated into a larger framework than is usually the case with discrete disciplines: one of the immediate results was that a biologist and an anthropologist found common ground for research into second-century A. D. Egyptian cemetaries.

Other means at the GE office's disposal have been the scheduling of a seminar for university administrators which focused on the national reports and gave considerable attention to the issue of the civilization requirement, directing college advisement centers to encourage students to take the civilization sequences, and in drawing student attention to these courses in the printed class schedule. It has also provided seed money for departments wishing to develop alternative sequences to the history/humanities courses, for faculty to receive release time for expanding their expertise in other areas, and for developing audio-visual materials needed in cross-disciplinary presentations.

We are coming to realize that even these simple measures can have a considerable effect upon the number of students enrolling in the specially designated courses. E.g., enrollment figures in these courses have increased appreciably since the GE office began its active campaign in 1983; 1985-1986 enrollments in the four two-semester sequences are more than double the average for the period 1980-1983, and forty percent above 1983-1984.[13] Despite limited evidence at present, and giving some allowance to other variables, there is strong indication that students are responding to the encouragement to register for the historical sequences and that the emphasis placed upon these courses during the past two years by the GE office, the effort expended by faculty, and the dialogue which continues on campus among the faculty and administrators have all produced a significant increase in student enrollments in "civilization" courses.

PROBLEMS

The problems of implementing such a requirement into an existing core curriculum are several: some faculty resist what they consider to be a violation of their "turf," while others with training and professional interests in Western cultures resist having to think and prepare in global terms. But the largest, long-range problem is that of providing enough faculty to service a university-wide core course for 27,000 students. Such a dilemma was clearly noted by Sullivan and has immense ramifications.[14] Our philosophy and humanities departments must decide whether any new or replacement faculty will be selected in part for their ability to enhance a world civilization program. The History Department has found that it cannot successfully maintain the older world history sequences while placing increasingly more emphasis upon cross-disciplinary enterprises. Faculty in all departments involved in this program must continuously evaluate the courses they are developing to ensure that the objectives are being met and that students are indeed becoming more knowledgeable of and more sensitive to the global perspective. The administration, on the other hand, must continue to encourage innovation and imaginative course development in this direction without losing credibility on other vital issues confronting the university.

CONCLUSIONS

Gaff notes that the development of "global perspective" involves three distinct areas: knowledge, affect, and language.[15] While there can be little doubt that the language and attitudinal changes are to some large degree influenced by the missionary service, semester-abroad, and other travel-study experiences of a sizeable percentage of the student population at Brigham Young, and by the recently instituted foreign language requirement as part of general education, the integration of these experiences into a larger frame of reference by means of the two-semester civilization sequence is seen as an important addition to their education. Without a clear and public mandate from the university administration, the GE office at BYU has begun to implement a program of strengthening student exposure to world civilizations through the encouragement of course development, the altering of faculty attitudes, and the encouragement of student enrollment in two-semester sequences. Evidence to date suggests that the "soft-sell" approach is working, that persuasion is succeeding where fiat would not. It is hoped and expected that with further refinement of present courses, the conscientious development of additional courses, and the broadening of faculty expertise beyond the limits of their own disciplines, a university-wide requirement will become a reality within the next few years, and Brigham Young University can more honestly declare "The World is Our Campus."

NOTES

1 [1]The Origins of Modern Europe--The Medieval Heritage of Western Civilization, pp. 1-2.

[2]Ibid., p. viii.

[3]Cf. Jerry G. Gaff, General Education Today--A Critical Analysis of Controversies, Practices, and Reforms, 1983, p. 92: "Statesmen claim that Americans must think in global terms and become more knowledgeable about peoples beyond their shores. We live in a world ever more interdependent, drawn together by rapid transportation and communication and by trade and security pacts, a world ever more threatened by acts of international terrorism and environmental degradation. Thus contemporary education can no longer be confined to this continent, or even to the Western tradition, . . ." This view is echoed by William J. Bennett, To Reclaim A Legacy, 1984, p. 30: "[Western Civilization] is not . . . the only great cultural tradition the world has seen . . . We should expect an educated person to be familiar with them because they have produced art, literature, and thought that are compelling monuments to the human spirit and because they have made significant contributions to our history. Those who know nothing of these other traditions can neither appreciate the uniqueness of their own nor understand how their own fits with the larger world. They are less able to understand the world in which they live. The college curriculum must take the non-Western world into account, not out of political expediency or to appease interest groups, but out of respect for its importance in human history."

[4]E.g., Session on World History, American Historical Association Annual Meeting, December, 1981, Los Angeles, reported in The Chronicle of Higher Education, 27 January 1982, p. 7; Conference on Teaching World History, 12-14 May 1982, United States Air Force Academy; and What Americans Should Know: Western Civilization or World History?--A Conference to Reassess the Survey Course in Western Civilization, 21-23 April 1985, Michigan State University. Even the 1985 American Studies Association Annual Meeting at San Diego, California, got involved in the debate, urging that American studies be "deprovincialized" and drawn more into a comparison with the experiences of the rest of the world; as reported in The Chronicle of Higher Education, 13 November 1985, p. 7.

[5]Cf. Geoffrey Barraclough, History in a Changing World; Marshall Hodgson, "Hemispheric Interregional History as an Approach to World History," Journal of World History 1 (1954) pp. 715-723; William H. McNeill, "A Defense of World History," The Prothero Lecture, read 1 July 1981, Transactions of the Royal Historical Society. Excerpted in World History Bulletin, vol. 1, nr. 1 (Fall/Winter 1983) pp. 1-7. See also H. Loring White, "World History Since Toynbee: The Emergence of Macrohistory," paper read at the World History Conference, pp. 1-13, and Edith Dolnikowski and Janet Baldwin, "The Survey Course in Non-American History: A Bibliographic Review of the Issues," What Americans Should Know: Western Civilization or World History?--Proceedings of a Conference at Michigan State University, April 21-23, 1985, edited by Josef W. Konwitz, pp. 14-55.

[6]General Education Today, pp. 93-96.

[7]Twenty-one of the respondants indicated that they were teaching some version of Western civilization, while sixteen reported offering some version of a world civilization course. Of these latter, eight teach courses required of all students as part of the core curriculum, the remainder courses which are optional within the core curriculum or part of the general offerings of their departments.

[8] "Summary Statement," What Americans Should Know--Proceedings, pp. 259-260.

[9] Of this number 8,758 have served missions outside the United States, and 6,390 of these were in non-English-speaking countries.

[10] During the period 1976-1981, the thrust of general education at Brigham Young was in "modes of thinking" and "skills." An administrative change in 1981 was accompanied by a move to introduce substantial "content" back into the program. Today, general education strives to maintain a balance between these two approaches. All students are now required to complete the option at or above the fourth semester of university study in a course involving reading, literature, or history taught in the language (conversation or grammar courses will not ordinarily satisfy the requirement). Courses in Arabic, Chinese, Dutch, English-as-Second-Language, Finnish, French, German, Classical Greek, Hebrew, Italian, Japanese, Korean, Latin, Portuguese, Russian, Scandinavian, Spanish, or Thai are available on a regular basis, while less commonly taught languages such as Afrikaans, Aymara, Cakchiquel, Modern Greek, Indonesian, Maori, Quechua, Navajo, Raratongan, Persian/Farsi, Samoan, Serbo-Croatian, Tagalog, Tahitian, Tongan, and Welsh may also be used. For a discussion of competing philosophies of general education, see Gaff, General Education Today, Chapter 3.

[11] History 110 deals with world civilization to 1500 A. D.; History 111 covers modern world history. Humanities 201 deals with the arts and letters of western civilization from the classical period to the Renaissance; Humanities 202 covers the period of the late Renaissance to modern times. Philosophy 201 deals with ancient and medieval philosophers of the western tradition; Philosophy 202 covers major modern philosophers.

[12] In an attempt to provide some point for discussion between various disciplines, the GE office prepared a list of desiderata for courses being considered. Included among these: 1) an interdisciplinary approach, 2) a sense of history, 3) epistemological considerations, 4) a world, rather than western focus, and 5) attention to some of man's major literary monuments.

[13] Growth in total enrollments for five civilization sequences is as follows:

1976-1977: 947; 1977-1978: 985; 1978-1979: 928; 1979-1980: 979; 1980-1981: 800; 1981-1982: 732; 1982-1983: 789; 1983-1984: 920; 1984-1985: 1,102; 1985-1986: 1,631*

*This figure is based upon the current total of 1,209 plus the average of recent enrollments for spring and summer terms projected for this year.

[14] "Summary Statement" p. 260-268.

[15] pp. 93-96.

LIBERAL LEARNING REVISITED: THE CHALLENGE FOR COMPREHENSIVE UNIVERSITIES

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For comprehensive universities, a central challenge emerges from the contrast between some basic assumptions about the profile of entry-level undergraduates and the traditional values placed on liberal arts as well as the growing interest in liberal learning in the public sector. Educators are faced with the dual questions of: Should general education be imposed on those who fail to see its worth? How can career-oriented undergraduates be enticed into exploring the horizons of thought attainable through serious study of letters, sciences and the arts?

One basic assumption is that most students at the nation's non-Ivy League comprehensive universities are different in their abilities and aspirations from those entering Stanford, Harvard, Yale and Princeton. Falling somewhere between punk and prevocational, most of these students simply do not view Plato's Republic as germane to their quest for top-dollar salaries after graduation. They find concentration on Dante's Inferno less rewarding than catching the next episode of Miami Vice or Dallas. At the onset of their academic careers, many of the students who enter comprehensive universities today may be viewed collectively as lacking the background, value system and motivation to appreciate the traditional value that educators place on liberal learning. Uninitiated and uninterested, they are likely not to choose general education if they see liberal arts courses as interfering with their primary goals of career preparation. In some areas, the faculty members who advise them may share their predisposition toward more technical courses or may be forced by overcrowded pre-professional curricula into guiding their charges away from the liberal arts courses.

In juxtaposition, the nation's universities are being joined by corporate leaders in a ground swell of interest in recapturing the gifts of analytical thinking made possible through liberal learning. The unpublished findings of the Carnegie Foundation for the Advancement of Teaching (1985) in their General Education Survey showed that 60 percent of the 968 four-year institutions surveyed were in the process of reviewing and revising their basic education requirements. When asked to rank five general education goals in order of importance, more than two-thirds placed as first priority "discovering the broad range of human knowledge through an introduction to the academic disciplines."

With the pragmatic view, corporations in the United States are scrutinizing the liberal arts portion of transcripts of college graduates as indicative of their potential for leadership. Corporate expectations for employees go beyond technical competence to their ability to adapt to and lead change. An executive of American Can Company, a multinational packaging firm, expressed such expectations in a 1984 issue of Business Week's Guide to Careers, (1984) "I want imagination and organization, confidence and humility. Above all, I want people who are smart, who know how to use their brains, and how to work well with others". Business leaders note that the key qualities for managers over the next decade is something tagged as "assertive versatility" or the ability to respond creatively and quickly to unique challenges in a rapidly changing society. In short, corporate employers focus on the liberal arts background as establishing patterns of analytical thinking and humanistic viewpoints that coincide with the needs of large corporations.

If the popular press is a valid indicator, the interest in liberal learning expressed by educators and business persons seems to be reflected by the general public, particularly by parents who are faced with decisions concerning the best expenditure of their education dollar in times of rising costs. The November 25, 1985, issue of U. S. News and World Report focuses on "America's Best Colleges" using their commitment to the liberal arts as the prime determinant for the ranking of the 788 colleges and universities surveyed (1985). They quote King's College President James Lackenmier as emphasizing, "It is liberal learning which, after all, prepares students for the changes that their lives and their careers will ask of them", and they feature an editorial by U.S. Secretary of Education William J. Bennett on the "Lure of Learning" in which he extols liberal studies as the major requisite for "examining life's enduring questions".

In summary, a consensus seems to be growing between educators, the business world and the general public that liberal learning not only enriches the life of the learner but prepares him or her for longterm challenges that require analytical thinking and humanistic actions. While respect for the intrinsic value of liberal arts education is as old as education itself, this relatively recent swing toward general education as a viable complement to the technocratic trends of the past thirty years poses some serious questions for comprehensive universities.

If indeed the policy makers and much of the public agree on the fundamental value of liberal learning, how can this joint belief be implemented to involve and affect university students? How can the comprehensive universities across the nation infuse liberal arts into their curricula? More importantly, how can they coax students into serious study of courses in the liberal tradition? Concomittantly, how can liberal studies be stressed without jeopardizing the scientific and technical studies that are essential in professional schools and fundamental to technically competent graduates?

MECHANISMS FOR INTEGRATING LIBERAL LEARNING INTO THE CURRICULUM

Northern Arizona University makes no claim to having definitive answers to these questions but has acknowledged the challenges of enhancing liberal learning and taken some positive steps that are working in concert toward the goal of increasing the involvement of undergraduate students.

Perhaps the most critical prerequisite is an attitudinal one, a shared commitment to liberal learning among the leadership and the faculty. An absolute requisite is strong central leadership that guides, nurtures and encourages the faculty to recognize and express their support of liberal studies. Equally important is the commitment of the mid-management level; attitudes of deans and departmental chairs set the local tone and in doing so determine the freedom of interaction among faculty members and the directions they communicate to their students.

While a supportive mental set is fundamental, it may be the most difficult to achieve campuswide. At NAU the progress in establishing the attitudinal background has been made by both subtle and direct means. The Lilly Foundation served as a catalyst by funding the participation of key administrators and faculty members in a series of workshops that examined the basic philosophy of liberal studies, as well as possible structures for requirements. With renewed dedication, the participants returned to campus to a mixed reception. Some faculty members were inspired by the Lilly group, some frightened and some were simply unmoved. Without trying to force the direction of change, the academic vice president communicated his values unobtrusively in contacts ranging from welcoming speeches to casual conversations. Lengthy deliberations were held, and sufficient time was allowed for ample discussion. Some of the deans brought the message from industry that leadership potential is a corporate expectation; some openly expressed their conviction that the studies that build the necessary abilities to analyze and resolve human problems lie outside their technically oriented colleges. Importantly, the faculty was called to reassess general education, to discuss the basic philosophy of the institution, to restate guiding principles and to revise the structure of the liberal studies requirement for all undergraduates.

Restructuring the general education requirement was a prolonged, agonizing and ultimately healthful experience. Deliberations of faculty committees, input from outside sources and products of faculty ferment were melded into the framework of a 44 credit-hour requirement over a three-year period, and implementation was accomplished in about a year. The program has been in place for about three years and is scheduled for extensive review soon. In spite of some tendencies toward turfism and reluctance to change, the faculty established that general education requirements would be met only by regular courses that conformed to rigorous guidelines. Fundamental courses (as opposed to applied) that promote critical thinking and include a significant writing component were organized into blocks designated as foundation studies (English and mathematics), natural sciences, letters, creative arts and social and behavioral sciences. The structure itself was secondary in importance, however, to the value derived from the stimulation of faculty through rethinking liberal learning and related issues. The resulting impact seems to have been that both faculty and students grew in their respect for liberal education. Careful monitoring and incisive evaluation should reveal whether or not this impression reflects reality.

Advising emerged as a backup mechanism for assuring timely student participation in liberal learning. NAU recognizes faculty advisors as the vital communication link to students, requires that each student have a faculty advisor and includes good advising in the faculty reward system. Moreover, in the past three years, several steps have been taken to strengthen advising across the campus and to address the needs of students who are undecided about their majors. A growing number of colleges now have central advisement locations during peak advising times to assure easy access to regular faculty members who are familiar with major programs. A central advisement center serves undecided students, mostly freshmen and transfers, with faculty members from across the campus who have been specifically selected for their caring attitudes and advising skills. Under vigorous leadership, these advisors practice intrusive advising, the active pursuit of contact with advisees to check their progress, guide them to sources of assistance and be certain that they are addressing registration procedures.

One key aspect of central advising reinforces the positive climate for liberal learning, the insistence by advisors that students take foundation courses early in their academic careers and that they select a broad spectrum of liberal studies courses to start to satisfy general education requirements. In other words, faculty advisors insist that students build skills in English and mathematics as freshmen and that they gain exposure to general education early enough to capitalize on any budding interest in liberal learning. Preliminary studies on campus show that this advising stratagem may be particularly significant to the progress of marginal students in preventing avoidance behavior or the tendency to postpone courses they view as threatening until late in their university careers. Not only does such postponement deprive students of fundamental knowledge that could be used to their advantage in other courses, it prevents extensive exploration in liberal arts areas because it leaves them deficient in prerequisites. The advantages of timely introduction of good students to liberal learning are obvious; many experience the lure of learning and want more.

For the students who have glimpsed the world of thought and seek the stimulation of its pursuit, a well-developed Honors Program offers small classes that address selected fundamental topics under the best minds on campus. The core curriculum includes courses in social, scientific, artistic and literary perspectives and is augmented by courses in topics selected from anthropology, art, biology, chemistry, economics, English, geology, history, humanities, math, modern languages, music, philosophy, physics, political science, psychology, sociology and theatre/drama plus directed readings and independent studies. Maximum interaction is encouraged by seminar formats, and extensive reading and writing are required. Moreover, the program is constructed to entice good students to enter this enriched environment. It provides the options of satisfying all of the general education requirements with honors courses or of permitting students to sample courses of interest. Approximately a dozen courses are offered each semester, and a total of more than 200 students from a variety of majors generally participate.

In the past four years, an enthusiastic director has expanded the honors concept to the departmental level; several departments have their own honors program of courses, and others have developed speakers series and found ways of honoring their top students. To cap its focus on liberal learning, the Honors Program sponsors an Honors Week each spring during which departments concentrate their related activities and university-wide functions recognize outstanding students and a faculty scholar. Parents are invited, and the campus as a whole turns its attention to academic achievement and the excitement of learning. For many the capstone is an address by a renowned scholar for which classes are dismissed and the staff is released to attend. Typically, the auditorium is packed, and the speaker's topic is echoed in conversations across campus.

CONCLUSION

Among the multitude of influences on the current university panorama are indicators that the educational pendulum may be swinging back toward liberal arts. Buttressed by corporate recognition that liberal learning provides the critical thinking, humanistic perspectives and communication abilities needed by their leaders, educators face the pleasant task of returning to their traditional values and the challenging one of involving and inspiring students who may not be convinced that liberal education is relevant and worthwhile. For comprehensive universities drawing from diverse populations, these tasks become particularly challenging.

The mechanisms chosen by this university to expose, involve and ultimately excite students about liberal learning are not necessarily innovative but seem to be effective in concert in enticing students into the traditional classroom. In our view, it is critical that the approach be multifaceted and include efforts to establish a favorable environment among administrators and faculty members, a rigorous general education requirement for all undergraduates, careful advising to assure student compliance in a timely manner and opportunities for interested students to pursue enriched educational experiences.

At present, our prime index to success is the increase of traffic in the library. In 1984-85, the use of the reference section skyrocketed compared to the previous year. The interlibrary loan service increased by 32%, computer-assisted reference services by 31% and term paper counseling by 23%. Such evidence indicates a measure of success from efforts to increase student participation in scholarship. Those of us who have faith in the lure of liberal learning firmly believe that many of these students will return for more.

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IMPROVING TEACHING THROUGH EVALUATION

THURSDAY, 17 JULY

1400 - 1530

IMPROVING UNIVERSITY TEACHING: WHAT DO STUDENTS SAY ABOUT THEIR TEACHERS?*

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Introduction

Many of those who are interested in the study and improvement of university teaching believe there is a need for more comprehensive studies which will provide a data-base for programs of improvement; provided, of course, that they are well designed and carefully conducted. In many instances, the differences of point-of-view about the roles of research and action in improving university teaching reflect not only personal preferences of the investigators and administrators, but also different understandings about the present state of research and development in the area and how one might best proceed to improve his understanding of it.

There are, of course, many varied ways to proceed and surely the scientific community now studying and working on improving university teaching will choose among the ways, according to the dictates of their own best professional judgement. Generally, many individuals and groups are concerned with the improvement of university teaching; among these are university administrators, the professors themselves, students, and some members of the general public. Naturally, each of these groups has a different set of perceptions of purposes and reasons for their concerns about the improvement of teaching. Administrators often are interested in it as an aid in making personnel decisions; professors may manifest their desire to understand and improve university teaching for purposes of diagnosis and self-development. Students' interests are very clear and direct since they are the ones who will benefit--or not--from qualitative character of the teachers' performance. Students' opinions and perceptions about their teachers may be used by themselves and others to make better choices of courses and teachers (McKeacthie, 1979).

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* This paper is based on data reported in: Amodeo, M.C. and Feldens, M.G.F. Professores Universitarios: O que Pensam os Alunos?, Ciencia e Cultura, 35 (11): 1703-1711, November 1983.

Taking into consideration the complexitites of the teaching process, as well as the many factors influencing the improvement of university teaching, one might agree--without minimizing the importance of other aspects--that students' opinions are a very important component which should be included in any organizational analysis that contributes to improved university teaching.

Purpose of the Study

The major purpose of the research study, the results of which are presented in this paper, was to identify the characteristics of an effective university teacher, according to the opinions of students attending Nursing, Dentistry and Medical School at UFRGS, in Brazil. The study results were used to help provide (1) a better understanding of those dimensions of a university professor's teaching effectiveness that students believe is important and (2) a body of information useful in developing and implementing programs for the improvement of university teaching. Although the contribution student opinions about university teaching should make to the evaluation of university professors' classroom performance is far from settled, clearly there is a significant place for these kinds of understandings in individual and institutional endeavors to improve university teaching.

Research Method

Three separate groups of students were included in this investigation. The first group was constituted for the purpose of obtaining a body of raw data from university students, concerning their opinions about the characteristics of an effective university teacher. This group was composed of 175 students, attending Nursing, Dentistry and Medical School at UFRGS who were similar to those who would ultimately be included in the final study. They were asked to react to an "open ended" instrument, in which they were requested to list, at least, 5 behaviors or attributes which they thought characterized "good" university teachers, as well as 5 behaviors or attributes they considered as inapropriate or which they did not like in a university teacher. This instrument also asked for selected demographic information about the respondent and the teacher he was thinking of while answering the instrument.

The data arising from these descriptions of university teachers, coupled with a review of related literature, were used as basis for developing and listing of specific items which appeared in the second instrument. It was composed of 80 descriptions of teacher behaviors to which the respondents were asked to respond, using a Likert 5-point scale. This version of the instrument also contained a section asking for demographic information about the respondent himself and about the target-teacher selected when responding to the scale. These two sections were augmented at the close of the questionnaire with an open-ended invitation to comment and/or suggest. This trial version of the scale was answered by a purposively selected sample of 50 students taken from those who would be included in the final study. The reactions of four university professors to that version of the instrument were also obtained. These trial data-gathering procedures generated data on teaching effectiveness and its measurement that were analyzed and interpreted as they shed light on: (1) how the instrument and the data-gathering processes were affecting the character of the "teaching effectiveness" as expressed by the students, and (2) what the basic character was of the different respondents' opinion to the phenomena under investigation. Based on the data gathered and interpreted in these exploratory efforts, the instrument was modified in order to enhance the simplicity and clarity of the items and increase their meaning and relevance for this investigation.

The key data-gathering instrument for the study of university teaching effectiveness was, then, a questionnaire comprised of two sections. The first of which solicited demographic information about the respondent (e.g. age, sex, major, semester of program) and the target-teacher selected by the student (e.g. sex, course taught, grade given to the student, estimated age) and Section II consisted of 72 items to which the respondents were asked to give their position, concerning the particular behaviors or attributes of an effective university teacher on a Likert 5-point scale. The respondents were asked to check each of the 72 items, taken into consideration the degree to which they perceived that the expressed behavior and/or attribute was manifested by the target-teacher.

This instrument, "Escala de Opiniao sobre o Professor Universitario Eficaz" (Amodeo, 1979), was completed by 392 randomly selected university students attending Nursing (n=77), Dentistry (n=95) and Medical (n=220) School at UFRGS. This sample represented approximately 25% of the target-population and it was proportionally stratified according to course and semester of program of studies.

The instrument was individually answered by the participating students at an specific date and time previously arranged through a contact with the dean of the School and a teacher working with students of second or last semester of each included course. The general objectives of the investigation and the importance of their sincere and honest response to the scale, taking into consideration the target-teacher--a "good" university professor--were emphasized before the instruments were given to the students, in classroom.

Data treatment included descriptive and inferential statistical approaches. The descriptive statistical analysis of the data included the computation of frequencies and percentages of the students responses to the two sections of the instrument. Later, a factor analysis was performed on the responses to the scaled items in Section II, using the SPSS, with the purpose of determining the intermediate inference dimensions--factors--composing the effectiveness of university teaching, as revealed in these students' opinions. The data were, then, factorially analyzed by using the principal axis and the varimax rotation solution (Gorsuch, 1974).

Results

Some of the results derived from the descriptive statistical analysis about the respondents indicated that 55% of the sample were female and 45%, male. The range of the students' ages was predominantly on the "less than 20 to 23 years old," and the majority of them belonged to families having medium to high SES. The majority of the target-teachers selected by the respondents were male (74%), their estimated ages were predominantly (73%) in the 40 to 54 years range. It must also be stated that the grades received by the respondents in the courses taught by the target-teachers were, in the majority of the cases, B (41%) or A (30%). These results reveal that the grades given the participating students by the selected teachers were somewhat higher than the grades typically given in the Schools of Nursing, Dentistry and Medicine. There is no way of sorting out the impact of this fact on the students' selection of teachers nor their expressions of opinion about what constitutes effectiveness in university teaching--nor in this study nor in investigations developed with the specific purpose of understanding such relationships (Feldman, 1976; Cohen, 1981; Scheurich et al, 1983).

The results of the factorial analysis of the data indicated six factors representing the construct of university teacher effectiveness, as perceived by these college students. These factors were named: I. Student Participation; II. Classroom Organization and Management; III. Teacher Clarity; IV. Acceptance of Students; V. Punctuality and VI. Systematization.

The student responses, which generated Factor I of the construct effective university teaching, value the use of varied teaching procedures in the classroom, the development of topics in different ways, the opportunity for independent as well as group work, suggestions for supplementary reading and extra class work, questioning and discussion that will stimulate and encourage the participation of students. According to the opinions of the respondents, besides having knowledge of the subject matter to be taught, an effective teacher should possess teaching skills enabling him to promote and sustain an intellectually challenging instructional setting. These findings are similar to the ones observed in other studies.(Miron and Segal, 1978; Marsh, 1982; Feldman, 1984; Moses, 1985.)

The students' responses which generated Factor II, Classroom Organization and Management, include aspects related to: enthusiasm for and consciousness of the importance of the subject-matter being taught; presentation of the subject-matter in a logical manner, including the use of schema and summarizing ideas; sensitivity to students' background and progress, and providing feedback to students. Under this factor students also emphasized the importance of well-defined teaching procedures; speaking clearly and using simple but correct language; and exerting leadership with the students. It seems that these students perceive an effective teacher as a professional capable of communicating the subject matter in an organized and interesting manner while making use of varied teaching methods. These dimensions of effective teaching have been reported in other investigations (Castro, 1972; Hildebrand, 1973, Schevrich, etalii, 1983; Feldman, 1984, Moses, 1985).

Teacher Clarity, the resultant factor III in this investigation, includes aspects of teaching such as the clear expression of ideas; lecturing skillfully; knowledge and understanding of what is being presented, and providing satisfactory answers to students' questions. Teacher clarity has been considered as an important variable in the study of teaching effectiveness (Rosenshine, 1971). Recently research has identified low-inference variables of which it is comprised (Feldens etalii, 1980; Magdalena, 1980; Cruickshank and Kennedy, 1986).

Factor IV, Acceptance of Students, include descriptions of effective teachers as understanding students and their problems, showing respect for students' opinions; accepting criticism and suggestions, and being patient, available and helpful; which suggests a friendly, respectful classroom climate. These findings are supported by other studies' results, which indicate that personal characteristics such as friendliness, patience, understanding, sense of humor, openness, availability, acceptance of opinions, and respect for students are highly regarded by students characterizing effective teachers (Castro, 1972; Marsh, 1983; Scheurich et alii, 1983, Feldman, 1984; Moses, 1985).

Students participating in this investigation also emphasized the importance of teacher punctuality, Factor V, by expressing the value they place on teachers being on time and fulfilling their commitments.

Systematization, the sixth and final factor composing university teacher effectiveness in this study, seems to be closely related to Factor II, Classroom Organization and Management. Systematization includes descriptors of teachers such as providing handouts related to the subject matter, synthesizing the ideas in the lesson, and informing students the criteria to be used in evaluating them. These dimensions of Factor VI reflect the need for teacher preparation and organization for teaching, as observed in so many studies already referred to herein.

Summary and Discussion

The study reported in this paper was conceived and executed to provide a better understanding of and data-base for the improvement of instruction at the University. What, then, can we derive from the information students have presented on what makes a university teacher more effective?

The resultant factors representing university teacher effectiveness, as perceived by the students involved in this investigation, when carefully analyzed, present information that may be considered in the evaluation and improvement of instruction. It seems that, for these students, effective teaching comprises three major dimensions that may be summarized under the constructs: (1) inclusiveness (as revealed in the factors Student Participation and Acceptance of Students); (2) business-like (including the ideas composing the factors Classroom Organization and Management, Systematization and Punctuality); (3) stimulating way, vital response in dealing with subject-matter (as reflected in the factor Teacher Clarity, and knowledge of subject matter that was implicit in other factors). In other words, these students manifest a preference for a teaching situation in which they would feel included, would actively participate, and which would be intellectually stimulating as well-managed.

A question arises very strongly at this point: how can these results be put into action, how can they be used in improving university teaching?

Probably, each of these dimensions could be stimulated and supported through university programs for instructional improvement. These could include efforts to (1) enhance knowledge-base and understandings faculty have about their subject matter; (2) improve teachers' skills in interpersonal relationships; and (3) help teachers in organizing, managing, and evaluating the actual instructional situation.

The conclusions of this investigation certainly represented the views these pre-professional students have about teacher effectiveness (these are the important dimensions of teaching as reported by the respondents. Such information could be of significant help in the improvement of instruction.)

Naturally, we recognize that student opinion of teaching is not the evaluation of teaching. Therefore, we believe that these information maybe not ought to be used directly in the evaluation of teachers for administrative purposes. But it could be useful data for personnel (peers) people who will be responsible for evaluating teachers and could use such information through a more comprehensive process.

With the ideas derived from the students' manifestation about teacher effectiveness we can start generating programs that will enhance the dimensions--so highly considered--of university instruction. Perhaps, we ought to conclude that any comprehensive program for the improvement of the quality of teaching at the universities should consider the students' opinions as a reliable--and valid--source of information. And last, but not least important, aren't all these efforts made toward the betterment of students' experiences and outcomes? If so, shouldn't we get used to the idea of listening to what students have to say about their teachers and, consequently, about the quality of university teaching?

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IMPROVING LECTURER PERFORMANCE ; EVALUATION AS A BASIS FOR INDIVIDUAL COUNSELLING.

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INTRODUCTION

The aim of this paper is to trace the development of the evaluation activities in a staff development centre from its inception in 1981 to its widely accepted use four years later, showing how it was used and evaluating its impact on lecturers, students and university administration. A more general description of our activities has been described in an inaugural lecture by Moelwyn-Hughes (1984).

EVALUATION PROCEDURES

The authors are well aware of the debate, highlighted in published materials, on what many regarded as a possible conflict between the needs of lecturers and the needs of the institution. (See for instance, Kulik (1976), Brown (1975), University of London (1976), Derry (1979) and Braskamp et al (1984)). It was decided to adopt an approach which not only avoided such conflict but which might find a way of reconciling the two needs.

It was determined (Moelwyn-Hughes (1983)), that the approach should essentially be low key, purely voluntary and entirely confidential. It was on these three basic tenets that the Centre set out to win the confidence of possible users; it would be counter-productive, ran the argument, were lecturers required to undergo an evaluation by a process in which they had no confidence or towards which they entertained strong objections. The Academic Staff Development Centre (ASDEC) set out to help individual lecturers. The major instrument was a questionnaire of up to 25 items selected by each user according to the perceived needs, from a large item bank, drawn from American and British sources - see Derry et al (1974) and Kulik (1976). The questionnaire was then given to a class who were asked to respond to each item on a 5 point Likert scale by scoring from A, 'Agree strongly' to E, 'Disagree strongly'. Item mean scores and total mean scores for each survey were determined, and the lecturer given the results. From the very process of selecting suitable items, it was felt, there would derive value in that this focusing on details of the process of evaluation must bring about some awareness on the part of the lecturer. This awareness could only be heightened by closely studying the results of the survey.

Based on 1981 surveys, new approaches were developed and validated and a bank of 116 items established. (See Moelwyn-Hughes (1984)). Satisfactory computer programmes for reading and then scoring the results were developed. Many users soon found the service (that ASDEC offered) to be of considerable value, and thus the word spread. Where a Dean or a head of department was subjected to the process of evaluation it was found that many colleagues followed suit. (See Table 1 where the increased demand on ASDEC's services is shown).

TABLE 1

Year	Total No. of surveys	No. of student responses	No. of staff surveyed
1982	54	5519	55
1983	83	7102	91
1984	120	7877	114
1985	218	11116	152

As the services of ASDEC became more widely known, additional items were added, computer programmes were improved and surveys of varied nature were used. Table 2 lists the headings under which the surveys have been put.

TABLE 2

1. Rating of Lecturer
2. Course elements :
    - Tutorials
    - Written assignments
    - Reading assignments
    - Laboratory assignments
    - Course components
    - Aids to learning
    - Audio-visual aids
3. Student development :
    - Knowledge and skills
    - Interests and curiosity
    - Social skills and attitudes
    - Self-concept
    - Vocational skills and attitudes
4. Lecturer written items (where required).

N.B. In addition lecturers are encouraged to use a few open-ended questions.

Obviously, the aims of the surveys can vary widely. ASDEC has recently conducted a year-end survey of student views on all first-year courses in the Faculty of Engineering, a faculty wide survey of all courses given throughout the Faculty of Dentistry, and smaller surveys of student opinion on certain aspects of a particular course. With such surveys, it follows that many lecturers may be involved, and care has to be exercised in reporting back so that views about individual lecturers remain confidential to the lecturers while the rest of the information is disseminated to the department or faculty concerned.

RESULTS

When a lecturer survey has been completed and the results determined, a lecturer is invited to visit the Centre and receive a confidential print-out of the results. It is emphasised that nobody will be shown the results except the individual concerned, though naturally the lecturer may reveal the results if he so chooses. How to interpret the results is carefully explained and no attempt is made, at this stage, to advise the lecturer. Stress is laid on the need for the person surveyed to summarise the results and draw conclusions from them,before returning to ASDEC in order to undergo counselling - unless it is not desired. As will be appreciated, when a lecturer closely studies his/her results, and reports on them, the great strength of the counselling session lies in the fact that it is non-directive, hence more personal and far more meaningful. The element of "know thyself" is predominant. Where requested, a confidential report is then drawn up.

Confidence in ASDEC reporting has grown immensely, and the University administration has sought permission to use ASDEC reports for confirmation of appointment as well as for promotion procedures. The essential confidentiality is NOT breached because the administration asks applicants if they wish to support their submission with an ASDEC report. When they do so wish, the individuals and not ASDEC forward the report. This process, coupled with the non-directive counselling approach, has gone far towards emphasising the value of being subjected to an evaluation by students and the subsequent study of the results.

Table 3 examines the most frequently used items duing the 1984 - 1985 period. A study of Table 3 will illustrate how responsible staff have been in their selection of items. These items cover key elements of a good lecture, and it can be seen how this

University's lecturers boldly seek feed-back of a frank, positive and informative nature. It will be appreciated that the items a lecturer chooses for his questionnaire can give on some insight into that lecturer.

TABLE 3

31 MOST FREQUENTLY USED ITEMS 1984 - 1985
Showing item mean scores, frequency of use and subject matter

Item mean score	No of times used	No of student responses	Item No.	Subject matter
8.53	78	6291	33	Lecturer's attendance is punctual and reliable
8.50	158	12568	2	Thorough subject knowledge
7.82	144	10228	8	Lecturer well prepared
7.38	136	9391	6	Good relationship with class
7.36	82	5749	31	Good sense of humour
7.26	117	8375	20	Lecturer communicates effectively
7.16	59	5307	32	Lecturer writes legibly on board
7.12	119	9129	5	Good use of examples and illustrations
7.01	106	8209	1	Purpose of lecture made clear
7.00	87	5716	9	Amount of material right for available time
6.99	119	9460	24	Lecturer chooses and organises material well
6.87	48	3034	21	Lecturer uses voice effectively
6.81	55	4604	113	Students learned much factual material
6.73	96	8696	27	Visual aids effectively used
6.71	54	4713	16	What is expected during class made known

6.65	116	9475	114	Students gained good understanding of concepts and principles
6.59	146	10703	4	Clear understandable explanations given
6.59	96	8040	10	Lecturer readily accessible outside lectures
6.50	97	6753	19	Audience participation encouraged
6.43	67	4542	34	Lectures linked to other parts of the course
6.39	91	7358	15	Lecturer stresses important material
6.37	106	9156	30	Lecturer is sensitive to student problems & feelings
6.08	129	9606	3	Student's interest stimulated
6.06	78	5976	118	Interest in subject matter deepened
6.04	66	4829	28	Main points effectively summarised
5.98	47	4331	115	Students learned to apply principles to new situations
5.97	47	3877	84	Course well structured with clear objectives
5.91	61	3630	35	Interesting digressions are made
5.89	79	5631	26	Lecturer gets feedback on student understanding
5.81	89	6757	13	Lecturer maintains interest to the end of the lecture
4.55	59	5738	120	Students stimulated towards wider reading

If we accept an item mean score of 6.25 (being the mid point of the category B, "Agree") as representing an acceptable rating of that item by respondents, 3000 responses by students to an item and a frequency of use by lecturers of at least 45, it can be assumed that there is sufficient data to enable conclusions to be drawn with some confidence.

SUMMARY OF FINDINGS

1. In the main, lecturers at Wits were regarded by students as being well equipped for their lecturing, were perceived to have succeeded in lecturing at an acceptable standard, and to have established a reasonable rapport with their classes. Admittedly, those who chose to be evaluated were generally the better lecturers. However, gentle covert pressures have been building up on a much broader spectrum of staff for them to be surveyed, and the scope has widened considerably of late. Lecturers who return in a subsequent year for re-evaluation, using the same instrument and an equivalent group of students, have shown a marked improvement in their performance. (see Table 4)

TABLE 4

COMPARISON OF SCORES FOR THE SAME LECTURER

Lecturer	Year 1 $\bar{x}$	Subsequent year $\bar{x}$
A	7.72	8.59
B	5.73	8.44
C	4.56	7.38
D	6.04	7.10
E	5.42	6.93

Such evidence strongly supports the contention that critical appraisal, followed by counselling and the taking of remedial steps produce more effective teaching. It is held that better teaching brings better learning, and thus a far better university staff/student relationship.

2. Too few lecturers seem to appreciate the importance that should be attached to the process of winding up, summarising and closing a lecture. This aspect embodies the value of more firmly implanting in students' minds the major facets of a lecture.

3. Attention needs to be given to maintaining the interest of students to the end of a lecture, and to clarifying the practical applications of principles and concepts.

4. In planning individual lectures, more emphasis needs to be laid on the establishing of closer links with overall courses.

5. The selection of items for inclusion in surveys has been largely those that probe a lecturer's teaching techniques. This emphasis is understandable and it helps to build confidence in the validity of the measuring instrument. As users get feed-back on their performances, they often return, and then include many more items that probe other aspects of the course.

CONCLUSIONS

The system adopted to assess lecturer performances at the University of the Witwatersrand, Johannesburg has been accepted by the academic staff, the administration and the student body, whose co-operation is vital to its effective functioning.

The methods used avoid the conflict of different motivations of administrators and academic staff, whilst providing for the needs of both groups.

It is the authors' hope that their success to date in this field is the basis for a broader range of activities involving curriculum design and improvement, by working closely with academic departments. Our activities have heightened our colleagues' interest in co-operating with us in such activities in the future.

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EVALUATING TEACHING USING NOMINAL SCALING

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Reservations have been expressed about the use of numerical ratings to describe teaching performance. Bassin (1974) cites biases introduced where a decision is made to use rating scales. Rodewald and Carroll (1974) give evidence that number ratings of teaching are non-transitive. Certainly, one undesirable consequence is upward skewing of summative ratings, a matter seriously limiting their value where personnel decisions must be made.

We suspect that what we call "The Leviticus Effect" underlies the upwards distributions shown in Table 3. Students seem not to wish to judge their teachers harshly lest they create an atmosphere wherein they will be so judged also. The experience of the first author, garnered from 20 years in the chairman's office, is that even students who come to complain personally about a poor professor are loath to grade the professor and this is not the case when the visit is for purposes of giving praise. However, the same complaining student may be quite prepared to identify negative characteristics, thereby shifting the responsibility for judging quantitatively to the chairperson.

Nominative scaling of teaching is apparently not in use at present. We decided to test its applicability. Nominative scaling requires a judge only to identify where a stated quality is present or absent. Use of this scaling technique might result in more useful distributions because the student is simply making 'yes-no' types of discriminations and not assigning numerical grades to their teachers.

Method

Materials

Four (4) sets of teaching materials comprised of 4 lectures each were prepared. One (1) lecture within each set was aimed at competence levels representing either "very good", "good", "fair", or "poor". Lecture materials were prejudged by staff employing a method to be described, to determine the faculty evaluations of the written materials with respect to the above levels of quality.

As a first step toward establishing legitimate criteria against which judgements of video materials might be made, the second author wrote 16 undergraduate lecture scripts covering the topics of development, ethology, learning and physiology. Each set of 4 scripts represented quality levels of 'very good', 'good', 'fair' and 'poor'. Quality levels were defined in terms of "stimulation of thought", "ability to communicate", "offering worthwhile materials" and "overall quality". These dimensions were accepted to be relevant by both the students and instructors at the institution where the study was conducted.

Nine (9) full-time faculty (5 men and 4 women) were asked to read and evaluate the 16 lecture scripts and to make judgements with respect to level of excellence. All 9 judges regularly instructed undergraduates in psychology, and each had consistently received excellent ratings in the Student Course Guide. Lectures were revised, altered, and re-submitted until each attained the intended level of quality in the opinion of all 9 judges.

As a third step each of the resulting 16 lectures were delivered by 3 experienced lecturers and studio recorded for re-broadcast on black and white T.V. These staff were not well known to undergraduates who were to serve as observers, since two were on leave from regular teaching appointments elsewhere and the other had taught on a part-time basis, although for several years. Two (2) of the lecturers were female and another was male. The recorded lectures were 7-12 minutes long ($\bar{X}$ = 10 minutes).

In step four, scripts were developed to represent student opinion. These were to be the substitute for teaching rating questionnaires then in use which asked students to make numerical ratings. These scripts were written as "very good", "good", "fair" and "poor" evaluations of the 4 qualities (stimulation of thought, etc.). The 16 scripts were given to 4 student actors who practiced delivery of each from memory. Following live rehearsal the 4 actors, 2 males and 2 females between the ages of 18 and 20, were seated at a table behind nameplates and video recorded. Positions at the table were randomly assigned as each 'panel' was taped. Each of the panels was introduced as a recording of "typical student observations about teaching" and informed the viewers that they would be asked to "name the person who best described the instructor". The combination of 4 levels of adequacy plus 4 dimensions of quality plus 4 student panelists resulted in 96 recorded panels.

Participants

Male and female undergraduates served for course credit. All 426 were enrolled in introductory psychology.

Procedure

Each group of 19-29 participants viewed three lecture-evaluations sets. Participants were instructed, "check the name of the panelist who, in your opinion, gives the most accurate evaluation of the lecture." A total of 1278 responses (426 student judges X 3 lecture-panel presentations) comprised the data.

Results

Each panelist would be selected 25% of the time for any particular lecture by chance alone. However, results indicate that averaged over the 4 dimensions, 4 quality levels, and 3 instructors, there was 60.1% student agreement in evaluations. Internal consistency among students reached the criterion of significance ($p < .05$), for 42 of the 48 lectures. This we take as evidence that reliable evaluations of teaching may be made using the panel techniques.

Table 1 provides the average percent agreement among students for various experimental combinations. The percentages shown are averaged across all those lectures where students showed a major preference for the category indicated. There "no lectures" appears, students did not place any of the 12 video lectures in this category. We found that five of the six lectures

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Table 1

Employing highest percent agreement, video lectures were classified to show the degree to which students themselves agreed on evaluation. "No representative lectures" indicates that none of the video lectures were placed in this category by the greater percentage of students. The highest agreement is with respect to 'poor overall performance' and the lowest to 'poor value of materials' and 'very good overall performance' independently of what was expected from the scripts.

	Poor	Fair	Good	Very Good
Ability to Communicate	58.7%	68.4%	40.0%	65.6%
Stimulation of Thought	65.1%	54.8%	40.3%	30.0%
Value of Materials	no representative lectures	54.2%	49.2%	30.0%
Overall Performance	85.9%	68.9%	42.9%	no representative lectures

where the majority of participant judgements did not coincide with script ratings came from one lecturer. Considering that scripts, lecture setting, and technical inputs were essentially identical, this can be taken to indicate that video delivery characteristics are important to students' judgement of teaching quality.

Data related to the distribution of student judgements are shown in Table 2. These are given as the percentage of instances wherein staff

Table 2

Student evaluation of lectures as percent correct detection of staff evaluation of scripts. Breakdown is with respect to instructor, content dimensions and quality. There is a notable and reliable decline in congruence from "poor" to "very good" levels. Overall student-staff agreement is 47%. Combinations not homogenously rated by the academic staff are indicated with an arrow.

	(Instructor No:)	Poor	Fair	Good	Very Good	$\bar{X}$%
Ability to Communicate	1	78.3	55.0	23.8	73.9	57.8
	2	57.1	83.3	25.0	78.6	61.0
	3	71.4	42.1	40.0	61.9	53.8
		68.9	60.1	29.6	71.5	57.5
Stimulation of Thought	1	78.6	33.3	15.0	11.1	34.5
	2	81.0	54.5	45.0	8.3	47.2
	3	81.0	55.0	20.0	19.0	43.8
		80.2	47.6	26.7	12.8	41.8
Value of Materials	1	↓ 10.0	70.0	↓ 42.9	30.0	38.2
	2	19.0	50.0	66.7	9.5	36.3
	3	40.9	57.1	33.3	8.7	35.0
		23.3	59.0	47.6	16.1	36.5
Overall Performance	1	100.0	71.4	↓ 14.3	28.6	53.6
	2	100.0	79.1	20.0	38.1	59.3
	3	100.0	50.0	10.7	14.3	43.8
		100.0	66.8	15.0	27.0	52.2

judgements of scripts coincide with student judgements of lectures. It appears that staff and students concur about poor more than they do about good lecture performance. The best agreement overall is about "ability to communicate". Interestingly, this is the most technical dimension of the 4. As might be expected, poorest agreement is shown regarding "value of material"..

The distribution of student evaluations using nominative scaling appears to differ considerably from numerical ratings. Table 3 summarizes the distribution of numerical ratings for 4 universities. Compare the upward skewing here with the generally bi-modal distributions in Table 2.

Table 3

Percentage of ratings for "overall performance" in psychology courses reported in course guides published for University of Alberta (1975), Carleton University (1975), Dalhousie University (1974), and University of Western Ontario (1975).

	Very low %	Low %	Moderate %	High %	Very High %
Alberta	0.0	.005	7.9	34.5	57.2
Carleton	0	0	7.7	61.0	31.3
Dalhousie	0	.002	3.2	34.0	62.6
Western Ontario	0.0	1.7	16.0	44.7	37.6

Ratings were also made of the televised lectures by 3 academic staff. Their accuracy was low in "poor" categories as was the case with students and also in the "very good" category, unlike the students. The greatest discrepancy was in respect to "stimulation of thought" and "value of material".

Here, relative to ratings of lecture scripts, staff greatly over-evaluated the presence of these qualities in the video lectures. Students greatly underestimated them.

Discussion

Results show a major change in the evaluation of teaching is likely if the measurement technique is changed. Although staff as well as student judgements are affected by the video lecture format, the data strongly suggests that students tend to be less generous when making nominative judgements than when making numerical judgements. Possibly the reason for this is the Leviticus Effect. Students are not required to produce a numerical response but only to recognize someone else's verbal evaluation accurate. Or, it might be related more to distinctions between the classroom situation and our lecture tapes. Evaluations of lecturing ability in the classroom are presumably based upon averaging a series of experiences each of which lasts 50 or 80 minutes, as compared to our one session exposure of 7 - 12 minutes ($\bar{X}$ = 10 minutes). Also, the absence of written or reading assignments, testing and grading may be implicated.

Nonetheless, it is impressive to us that students were able to provide reliably consistent evaluations for 88% of the lectures they viewed. This leads us to believe that with a refining of the qualitative materials, an investigation of additional dimensions and an improvement of the video-tape technique, can result in an even better consistency among students. Practical reasons recommend further research. Nominative scaling using the student panel technique could prove valuable to administrators who are obligated to make personnel decisions reflecting teaching.

Data indicate that it is important to specify the dimensions of teaching to be evaluated when using nominative scaling. Students agreed in their evaluation of "poor" or "fair" overall performance and ability to stimulate thought. The instructor's ability to communicate is less well defined although students recognized the superlative case. Value of materials seems still less clearly connected to lecture experience.

Staff-student differences are complex. They generally indicate a lack of faculty-student congruence in ratings using this nominative method. We found that the 16 average percentage agreement between the 3 staff and 426 students who viewed the lecture tapes did not exceed 47%. Students appeared to be less generous in their ratings, particularly along the dimension value of material. This may reflect the greater competence of staff to judge quality of subject matter although this same effect is present on other dimensions, excepting possibly, ability to communicate. This is the least subject-centred dimension.

An interesting feature of the distributions of Table 2 is their bi-modalities. The lowest correspondence between script and lecture judgements was always in the mid-positions. In general, "fair" lecture materials tended to become "poor", while "good" scripts moved toward a "very good" position.

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STUDENT EVALUATION OF TEACHING:
IMPACT OF POTENTIAL BIASES

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One of the areas of concern in students' evaluations of instruction in higher education is the effect of background characteristics. Many instructors believe that student ratings are biased by a number of factors unrelated to teaching. In a study reported by Marsh and Overall (1979), faculty listed course difficulty, grading leniency, instructor popularity, student's interest in the subject, course workload, class size, reason for taking the course, and student's grade point average as potential sources of bias in students' evaluations. Faculty members were concerned that these biases may weaken the accuracy of student ratings and thus make them inappropriate for personnel decisions.

Many studies have examined the influence of background characteristics on students evaluations of teaching effectiveness with conflicting results. Review articles by Aubrecht (1981), Aleamoni (1981), Feldman (1983), Marsh (1984), McKeachie (1979) and monographs by Centra (1979) and Murray (1980) have examined, compared and discussed the empirical findings in this area. Price and Magoon (1971) and Pohlmann (1975) examined certain potential biases and concluded that over 20 percent of variation in student ratings was attributed to background characteristics. Similarly, Burton (1975) showed that potential biases (including grade point average, expected grade, class standing, reason for taking the course, interest in the subject) explained between eight to fifteen percent of variability in students' evaluations. Brown (1976) also reported the influence of background variables (accounted for fourteen percent of the variance) in student ratings. Finally, Marsh (1980 and 1983) examined the multivariate relationship between sixteen background variables (including class size, expected grade, teacher rank and student ratings) in different academic units (e.g., social sciences, engineering, business administration) and demonstrated that between five to twenty percent of variance in ratings was accounted for by potential biases.

The purpose of this study is to explore the influence of background characteristics on students' evaluations of teaching. Specifically, this study examines the impact of student characteristics (sex, class level, expected grade, mood), instructor characteristics (academic rank), and course characteristics (class size, course workload, required/elective status) on end-of-term evaluations of teaching. Review of the literature indicate that these variables influence student ratings to certain extent; however, findings are different, and somewhat conflicting, across individual studies. Results from studies examining the effect of student characteristics on faculty evaluations have been significant with regard to certain relationships. Most studies found no differences between ratings made by male and female students. However, Elmore and LaPointe (1975) reported more favorable ratings by females on certain aspects of teaching. Also junior/senior students tend to rate instructors more favorable than freshmen or sophomores. (Centra and Linn, 1975; Marsh, 1983).

Majority of studies have reported positive correlations between students' evaluations and expected grades (Feldman 1976, Centra 1979, Marsh 1983); however, the relationship is nonexistant according to other studies (e.g., Kennedy, 1975). Research on student mood in relation to teaching evaluations shows that mood as emotional state has little or no effect on student assessments (Comer, 1978).

Other background characteristics, with potential impact on students' evaluations, that have been studied by researchers are instructor rank, class size, course workload and reason for taking the course (required vs elective). Academic rank may influence student ratings in that associate and full professors are usually rated better than instructors and assistants, other things being equal (Marsh 1980). With regard to class size, small classes were found to be rated more favorably than large classes (Elmore and Pohlmann, 1978), though some authors view the relationship primarily limited to class discussion and individual rapport evaluations (Marsh et al., 1979; Marsh, 1984). Course workload effect on student ratings was reported by Marsh (1980, 1983). Workload is positively related to students' evaluations in that instructors demanding more work of their students apparently motivate them to work harder and as a consequence are rated more favorably. Finally, whether the course is elective or required may affect students' evaluations of teaching. March (1980, 1983, and 1984) and Pohlmann (1975) reported that students who take elective courses and those who take a course for general interest rate instructors slightly higher than those who take a course to meet the program requirements.

METHOD

Study participants were 1095 business students (541 males and 554 females) who took marketing courses in the college of business at a midwestern university during the fall semester, 1983. All the undergraduate marketing courses offered by the marketing department were included in this study. Overall, there were thirteen courses, taught in 38 sections. Class size varied from 7 to 75 students, with a median of 22 students per class. Courses ranged from introductory to upper level, spread out during the day and in the evening.

Courses were taught in multiple sections by 15 full-time and part-time faculty from all ranks. Faculty were all male, except one, with ages between 28 and 65 and at least three years of experience in teaching.

The study instrument was a two-part questionnaire consisting of instructor evaluation questions and classification questions. The evaluation questions were adopted from the STudents' Evaluations of Educational Quality (SEEQ) questionnaire (Marsh, 1982).

These items were originally developed by H.W. Marsh for collecting students' evaluations of college/university teaching. They have been tested for reliability and validated against the retrospective ratings of former students, objective examination as a measure of learning, affective course consequences, and faculty self evaluation of their teaching effectiveness.

Items were chosen to reflect behavior and personality characteristics of the instructor and characteristics of the course. As such, six items represented instructor's behavior characteristics (enthusiasm, organization, interaction, and examination); two items identified instructors's personality characteristics (rapport); and two items suggested characteristics of the course (workload, value). Ratings were assigned on a 5-point Likert scale where "1" denoted "strongly disagree" and "5" denoted "strongly agree."

The classification questions were students' demographic characteristics (sex, age, marital status, employment, class standing and mood) and class/course characteristics (class size and time, course number and format, and whether the course was elective).

PROCEDURE

Prior to data collection, a memorandum was sent to faculty, whose classes were supposed to be surveyed, explaining the nature and purpose of the study, and seeking permission to use their classes. They were requested not to show up in class during the first twenty minutes.

Data were collected by graduate assistants who were trained for the task. They were instructed to explain the data collection procedure carefully to study participants, and to allow them enough time to complete the questionnaire. The questionnaire was administered in the thirteenth week of the fifteen week semester. Data collection took place at the beginning of class hours while faculty were not present.

RESULTS

Seventy-three percent of the study participants (1095) completed the questionnaire. This constituted a data pool of 801 responses. Canonical analysis (Nie et al., 1975) was performed using questions on instructor's personality and behavior characteristics (rapport, enthusiasm, organization, interaction, and examination) as dependent variables and eight background characteristics as potential biases (independent variables). The background characteristics were:

1. Student Sex. (1 = male, 2 = female)
2. Class Level. (1 = freshman, 2 = sophomore, 3 = junior, 4= senior)
3. Student Mood. A four item summated scale, adopted from Peterson and Sauber (1983) mood scale, was used. Mood scores varied from 4 (very poor) to 20 (very good).
4. Expected Grade. (1 = F, 2 =D, 3 =C, 4= B, 5= A).
5. Instructor Rank. (1 = Lecturer, 2 = Assistant Professor, 3= Associate Professor, 4 = Full Professor).
6. Class Size. (1 = twenty or less, 2 = over twenty).
7. Course Status. (1 = required, 2 = elective).
8. Course Workload. A 5 point scale (1 = light load, 2 = heavy load).

The redundancy statistic was partitioned (Sabertehrani and Peterson, 1981) to determine the proportion of variance in students' evaluations of teaching explained by individual background characteristics.

Overall, potential biases contributed significantly ($P<.01$) to variability in students' evaluations. About 9 percent of the total variance in student ratings was explained by background characteristics. Partitioning redundancy across these characteristics revealed that instructor rank ($P<.01$) and class size ($P<.05$) were the major contributors in explaining variance. They accounted for two-thirds of the variance attributed to background characteristics (6 percent in absolute terms).

One-way analysis of variance (Nie et al., 1975) was used, with evaluation items as dependent variables, to further clarify the effect of Instructor Rank and Class Size on students' evaluations. The results showed that while students invariably rated lecturers/assistant professors higher across all the evaluation items, they were significantly perceived better in terms of enthusiasm (humor), interaction, rapport (friendliness, sensitivity), and examination (fairness) than their counterparts. Students perceived the highest difference in lecturers/assistant professors' rapport (friendliness, sensitivity) and sense of humor.

Instructors were evaluated significantly higher (on the average .38 point higher) on all rating items in small classes (less than 20) than in large classes. Again, the highest differences occurred in instructor's rapport (friendliness, sensitivity) and use of humor.

DISCUSSION

It has been argued that students' evaluations are contaminated by potential biases and are surrounded by extenuating circumstances. The results from this investigation indicate that the impact of background variables, as potential biases, on students' evaluations is small. The percentage of variance explained by the background variables was less than one-tenth (nine percent) of the total variance in evaluation scores. This finding is well within the range reported by other authors (Marsh, 1980). More than two-thirds of the variance explained by the background variables was attributed to Class Size and Instructor Rank. None of the variables that is intuitively considered as potential bias and reported as such by researchers (e.g. Marsh, 1980 and 1983), like Expected Grade, Course Load, Course Status (required, elective), contributed to students' evaluation variability in this study.

Student ratings of teaching in small classes (less than 20) were significantly higher. This is in agreement with findings from other studies (e.g., Elmore and Pohlmann, 1978; Marsh 1984).

In particular, instructors were rated more favorable in small class settings on individual rapport and use of humor. The findings are also in support of the earlier results reported on associations between class size and SEEQ dimensions (Marsh, et al., 1979; Marsh 1980 and 1983).

The relationship between instructor rank and student ratings was in the opposite direction from what one would usually expect and from the literature review (Marsh, 1984). Lower-ranked instructors (lecturers and assistant professors) were rated higher on all the evaluation items than higher-ranked instructors (associate and full professors). In particular, assistant professors and lecturers were perceived more favorably with regard to enthusiasm (humor), rapport (friendliness, sensitivity), interaction with students, and fairness. However, students did not find the lower-ranked instructors significantly better than their counterparts in terms of organization (clear explanation, preparedness).

On the surface several plausible explanations can be offered for the above anomaly. First, the finding could be an isolated incidence occurred in a particular academic setting. Second, it can be argued that having been on the job for a longer period has dampened associate and full professors' zeal for interaction and rapport with students, and their enthusiasm for teaching. Third, in certain disciplines (e.g., business administration, engineering), associate and full professors who are usually tenured and have several years of experience are more engaged in outside consulting and therefore can be less enthusiastic about teaching and/or rapport and interaction with students. Further research in similar and contrasting milieus is needed to explore and substantiate these hypotheses.

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QUALITY AND ACCESS

THURSDAY, 17 JULY

1400 - 1530

HIGHER EDUCATION FOR LOW INCOME AND MINORITY STUDENTS: PROGRAMMING FOR EXCELLENCE

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Traditionally, access to higher education in the United States has been reserved for the elite. Before World War II, there was no serious effort to bring large numbers of the non-elite, (low income and minority populations), into higher education. This is not to say that some individuals did not succeed in higher education. It is to say that by and large, higher education was reserved for an elite socio-economic class. Francis sums up the attitude and practice in the following way. "A class structure which was unequal replicated and propagated inequality through selective access to higher education. Education beyond high school was viewed not as a right but as a privilege, and was indeed reserved to a privileged few."[1]

This tradition of restricted access to higher education on the part of low income and minority students became more undesirable in the post World War II era. The post war social order required that people participate in the social benefits of higher education. The GI bill provided the resources for students regardless of social or financial status. The move toward a more tolerant society in the 1960's made it more acceptable for people of color to be accepted into the professions and careers. Slowly, but without a doubt, there was an attempt to break the barrier which had kept low income and minority individuals from higher education.

Weathersby outlines the two major resources available for providing students access to higher education. The first is federal support which most often comes in grants or loans. The second is state supported programs implemented through already existing institutions. Courses, programs, and services funded by the state through public colleges and universities would be an example.[2]

Cross suggests two models which dealt with this phenomenon of access to higher education for non traditional groups in the United States. The remedial model clearly retains academic standards for graduation within the tradition of these institutions. An array of student services had to be developed to bring students not yet fully prepared academically up to par with those traditional students who had been prepared in high schools.[3]

Cross proposed another model entitled the pluralistic approach. In this effort, the academic institution itself changes to incorporate various approaches to teaching and learning, as well as different racial and ethnic traditions.[4]

The Goodrich Scholarship Program

> The Goodrich Program was initiated in 1972 with funds provided by the Nebraska State Legislature. It is named in honor of Omaha's State Senator Glenn Goodrich who authored the enabling legislation. The program is administratively housed in the College of Public Affairs and Community Service (CPACS). The program has a three-pronged approach. It provides pronged approach. It provides: financial aid in the form of tuition and fees toward the bachelor's degree, a specialized curriculum of general education emphasizing the humanities and the social sciences, and a comprehensive academic support and student personnel services. The goals of the Goodrich Program are as follows: to develop academic skills which will allow students to compete effectively in the ever changing society; to make students socially conscious and responsive; to help students build a positive self concept; and to provide students with a sound and innovative educational experience. The overall intent of the program is to provide a college education for people who otherwise could not afford it while simultaneously giving students a broad and meaningful experience in general education.[5]

The rationale for the Program is presented by Francis.

> "Young people deprived by low socio-economic status of most social goods, including education, were unable to obtain the skills and knowledge necessary to achieve upward mobility. Mired in poverty, these youth married and raised families; but could not afford adequate education for their children, who then were also unable to rise socially and economically; and so perpetuated for themselves and subsequent children the same cycle... poverty leading to poor education leading to further poverty. It was this vicious circle, this chain of poverty and deprivation that Senator Goodrich's efforts sought to break."[6]

A clear assumption accompanied the rationale and impetus for the program. That assumption is: that low income, nontraditional students have the same intellectual capacity for academic achievement as traditional students, if given rigorous academic stimulation with the associated support services.

"Students are recruited from populations who traditionally have not considered college, such as sons and daughters of blue-collar workers, persons of diverse racial and ethnic backgrounds, adult learners, handicapped persons, and individuals on educational release from the correctional system."[7]

Table 1 presents student characteristics at the University of Nebraska at Omaha (UNO) as compared to students in the Goodrich Program.

STUDENT CHARACTERISTICS OF GOODRICH PROGRAM AND UNO

	UNO	Goodrich
Percent Female	50.4	60.2
Percent non-white	7.3	50.6

The design of the program entails a three pronged approach, including a specialized curriculum, support services and financial assistance. The program itself then is a unique amalgam of the various approaches to higher education. It is traditional in that students are expected to perform adequately in standard liberal arts and professional programs especially in the junior and senior years. It is remedial in that study, basic linguistic, and critical thinking skills are emphasized in the freshman and sophomore years. It is pluralistic in that the Goodrich curriculum is organized around themes and learning activities uniquely appropriate for the target population.

Curriculum

The specialized curriculum is limited to the freshman and sophomore years. Students are required to take six credit hours of course work taught by the Goodrich faculty each semester of the first two years. These courses include English composition, Critical Reasoning or Autobiographical Writing in the first semester. The second semester the students register for a six hour humanities course, again taught by the Goodrich faculty. In addition to these Goodrich courses, the student must also take six or more hours from faculty in the university at large. In the sophomore year, students are required to take a six hour social science course each semester provided by faculty from the Goodrich Program. As in the freshman year, they are expected to take six or more hours from courses offered outside the Goodrich Program. There is no planned Goodrich curriculum for junior and senior years. From the beginning the Goodrich students are expected to take courses and compete academically in the traditional university setting.

The content of the courses includes material reflecting Black, Asian, Hispanic and Native American cultures. In addition, the faculty approach to teaching takes into account the different status of the Goodrich student. "The Goodrich student is assisted by a pool of multicultural professionals who are willing to interact on both a personal and academic level with students. This contact is achieved by the faculty combining the role of instructor and counselor which gives the program continuity and provides a closer relationship between students and at least one faculty member."[8]

Support

Low income students have many problems associated with this status, such as transportation, child care, and housing, to name a few. Goodrich personnel intervene as much as possible to be a broker, advocate and referral source in order to address these needs. Academic support includes tutoring services, special workshops and courses on writing skills.

> The Goodrich Program further recognizes the need of students to feel comfortable in a working situation in a new environment. In this regard, reinforcement aimed at academic success is advanced through the Writing Lab, Study Skills Center and other student services. This liaison of the program includes academic advising, personal counseling, tutoring, study skills, and a six week communication lab for all new students. Each student has a Goodrich advisor to assist him/her with problem solving and planning.[9]

However, the support service in many ways is similar to what has become a standard service of any university in terms of the financial aid office, and student and counseling services. The difference in the Goodrich Program is the extent of the services available and the ratio of staff to students in need. Here again, the service is expected to be more effective in that personnel delivering the service are more attuned to the needs of low income students as well as more sensitive to ethnic and minority perspectives.

Financial Assistance

The support given through financial aid has developed into a unique assistance, rarely found in higher education. That grants for tuition and fees are given is not unusual. The unique feature of this Program is that there is an emergency loan available to any student for any legitimate purpose, including child care, housing, medical service or other such need. This is a short term, (usually two or three months) no interest loan administered by the director of the program and available to a student within a day or two after application.

In a sense, of course, tuition remission, fees paid, loans and assistance for low income students are customary. In this program it does seem that because of the amount of assistance available, along with the delivery of the assistance, it goes far beyond the routine university response.

Assessment

Innovative, non-traditional programs require continual monitoring and evaluation. As stated above the Goodrich Program was instituted in 1972. During the 13 years between 1972 and 1985 six major evaluative reports have been submitted. An ad hoc committee to evaluate the program was developed by the dean of the college in the Spring of 1976 and delivered its report in January of 1977. An outside evaluator, Dr. J. Bruce Francis was hired to perform a thorough evaluative study of the program also in 1977. In 1982 a study of the graduates of the program was conducted by Professor Wilda Stephenson. A curriculum study of the program was conducted in 1983 and a major article reviewing the total program was written in 1984 by Professors Diane Gillespie and Phil Secret.

Finally, the standard academic review required of all departments at UNO was accomplished in 1985.

The ad hoc committee report (1977) focused upon the program's goals, students, faculty, curriculum and support services. The report strongly stated that the program was achieving its goals, that the student population being served was the population group that the program had been designed to serve, that the faculty was a diverse group of many interests and talents `...capable of spontaneous creativity to meet the challenge of both non-traditional student groups and a new approach to higher education.' It further stated that the curriculum was effective and that it would be desirable if the support services developed in the program could be made available to all of the students of the university.[10]

The Francis study was very comprehensive focusing not only upon the degree to which the program met its objectives, but also on the significance and worth of the objectives and of the program. The impact of the program on the students, and the features of the program that account for the impact, as well as the relationship of the program to the college and university were included. Findings are:

> The Goodrich Program appears to be achieving its objectives of providing effective access to a college education for low income students.
>
> The student experience in Goodrich appears strongly positive. Goodrich students are particularly impressed by the personal treatment they receive from faculty and by the availability of intensive individualized assistance.
>
> There appears to be ambivalence among faculty about the relative importance of teaching vs. research in the career advancement of Goodrich faculty, a conflict common to faculty in innovative programs for undergraduates.
>
> Goodrich students experience a well-thought out and well-coordinated liberal arts curriculum that challenges them and provides attractive stimulation. This curriculum meets the

> highest standards of academic quality and yet is so designed as to be relevant to the student's social concerns.
>
> ....the Study Skills Center is a particularly important element of the Goodrich Proglram and appears to be well organized and to be providing excellent services to students.
>
> The retention rate of those admitted to Goodrich is substantially higher than that of UNO students generally, even though the students admitted to Goodrich are among those traditionally considered to be higher risks.[11]

The Stephenson report focused upon graduates of the Goodrich Program, their employment status, the impressions of and experiences in the program. Results indicated that those who had graduated the program had been enrolled in a variety of degree programs and majors. Well over 90% of graduates were employed in a career or were pursuing a graduate degree.

The vast majority of the graduates were satisfied with their employment status and reported that they had very positive experiences in the program. Especially commented on was the interaction with, support and encouragement by the faculty and staff.[12]

The Gillespie and Secret article is a description of the program. They found that Goodrich is essentially similar to other University outreach programs, but that the specific array of support and educational activities is unique. Their description of the program includes data comparing the attrition rates of Goodrich students with the rates for UNO students in general. These data indicate that the attrition rates for freshmen at UNO during those years (1974-1976) was 62% while that of Goodrich students was 59%.[13]

The academic planning council report resulting from a review of the program in 1985 made a very strong statement about the quality of the Goodrich program. "The evidence is clear and unambiguous that the program is achieving the objectives for which it was instituted...."[14] The report further states, "the team does not consider it an exaggeration to characterize the Goodrich Program as a major contribution of the University of Nebraska at Omaha to American higher education."[15]

Evaluation of the program is a continuous process. Further major evaluative studies will be conducted in the coming years.

Summary

Various internal and external evaluations have attested to the effectiveness of the Goodrich Scholarship Program. All students admitted to the program are low income, demonstrating at least a one thousand dollar need by means of the standard finanical aid form. Program statisitics, stated above, indicate that 50% of the students are minorities. Retention/graduation rates support the goal of graduating 40% of those who enter the program. The success of the program revolves around the three pronged approach of a special curriculum, support and financial assistance. A special blend of tradition, remediation along with a pluralistic approach is offered as the effective methodology for dealing with low income, minority students. It is anticipated that with more sophisticated data collection and analysis, the remarkable success of this program can be further promulgated. For now, it stands as a sign of success among programs attempting to go beyond mere access to excellence for this particular population of students.

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DYNAMICS OF THE PROCESS OF GAINING ACCESS TO A PRESTIGEOUS INSTITUTION

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INTRODUCTION

Like most developing countries, the demand for tertiary education in India is increasing every year. Since certification is used extensively for recruitment and promotion in modern sector jobs, there is a marked escalation in the qualifications required, as more people are available than there are jobs. This in turn enhances the demand for further education.

In India, there is a clear hierarchy not only in the prestige of the academic institutions but also in the type of course a student is able to enroll. Job opportunities are perceived to be associated with the type of institution and course a student qualifies from. Once the student has gained access to a prestigeous institution and course, his job opportunities are assured to a large extent. Hence, the clamour to enroll in these institutions is very high.

All over the world, the more prestigeous the course and institution, the greater the competition to get in. As the number of places available, compared to the number of students aspiring for admission, is limited, gaining access in these institutions has a high premium.

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Till about three decades ago, most of the colleges and universities used grades in the qualifying high school examination as the criteria for admission. Even now many institutions do use the high school grades for admission. India being a large country with wide variations in the quality of schooling, some national institutions prefer to conduct their own specially designed entrance examination for admission. There are other institutions which use a combination of high school grades and aptitude tests, giving different weightages as admission criteria (Indiresan,1975). Of course, there are institutions where 'proper contact' is all important in securing admission. There is also a new category of institutions where admission can be 'bought' at a price which is quite often very high.

Studies of Hargadon (1981), Humphreys (1968), ICMR (1974) etc. have reported on the various aspects of admission procedures and practices. Most of these studies deal with the nature and type of admission tests and criteria used and their predictive validity for success in the concerned courses. While various aspects of the examination itself have been researched, there are hardly any studies available on the examinee (Indiresan,1978).

The use of specially designed admission tests is extending. Yet, it is significant to note that there are no studies reported on the dynamics of preparation put in by the students facing these crucial examinations which are highly competitive.

In India, professional education has very high value. As the demand for this education, especially technical education is very high, there has been a mushroom growth in the number of institutions. There are over 200 engineering colleges in India with a wide range in their quality and prestige. Among these institutions, the five Indian Institutes of Technology (IITs) stand out as the most prestigeous institutions.

The IIT System and the Admission Criteria

The ultimate for any student aspiring for higher technical education is to get admission in one of the five IITs situated in five major cities spread over the country. These IITs established by an act of Parliament as centres of excellence have been in existence for over twenty-five years now. They are solely funded by the Central Government and it is estimated that it costs over 1,00,000 rupees for the training of each student. This is nearly thirty times the per capita income in India, equivalent to nearly half a million dollars in the U.S.

Admission to the four-year undergraduate programme in the IITs leading to the Bachelor of Technology (B.Tech.) degree is based purely on an entrance examination, common to all the five IITs, known as the Joint Entrance Examination, JEE for short. A student is eligible to write the JEE at the end of twelve years of schooling. The examination consists of four papers, namely physics, chemistry, mathematics, and

English, each of three hours duration, spread over two days.

The competition is very severe as more than 70,000 students from all over the country aspire for admission, while the places available are about 1500 for all the five IITs put together. There is a separate secretariat which is responsible for conducting this mammoth exercise year after year in nearly 200 different centres in the country. The admissions are offered solely on the rank obtained by the student in the merit list based on the performance in the four papers.

A lot of money, time, and effort is invested in preparing for this highly competitive examination. It is the objective of this paper to highlight some of the dynamics of the process of preparation for this examination.

The Data

The data was obtained through a questionnaire given to the successful students within the first week of their entry to the IITs. The data was made available from three of the five IITs. A total of 560 students representing almost 40% of the students getting admitted responded to the questionnaire.

What Influences the Student to Write the JEE?

Any student who has an ambition for higher technology education, starts dreaming about the IITs by the times he reaches the 8th or 9th standard and this ambition gets reinforced at home and in the school. The parental influence seems to be the strongest as 59% of the students reported that their parents prompted them to write the JEE. Next comes the peer influence with 35% mentioning friends. The influence of teachers is not so strong with only 17% mentioning teachers. It is significant to note that 69% of the students reported that their parents would have been disappointed if they did not qualify for admission to the IIT. To the question "What are the factors, according to you, which are responsible for your success?' a large number of students reported encouragement, inspiration, guidance, pressure, moral support, nagging, and help, mainly from their parents and other family members. Sometimes teachers' and friends' encouragement and support are also mentioned. Thus, the home climate seems to have an enormous influence on the students' success in entering the IITs.

IMPORTANCE OF GETTING ADMISSION

To the question 'How important was it for you to get into the IIT?', 60% of the students reported that it was very important, 32% reported important and only 7% reported that it was not so important. This factor is substantiated by the finding that 20% of the students qualified for admission in their second attempt at the JEE and 1.4% in their third attempt. It is also significant to note that 29% of the students reported that they were planning to write the JEE again if they had not qualified.

To the question 'Did you feel nervous before the JEE?' 58% reported that they felt nervous to some extent, 14%

reported feeling nervous to a large extent and 28% reported that they were not at all nervous.

Preparation for JEE

As competition is severe, preparation for the JEE is taken seriously by those students who are keen on getting admission in one of the IITs. A certain amount of self-selection takes place by those who write the JEE. Those students who have some hope and confidence and are willing to put in the required effort only attempt this examination.

As was pointed out earlier, a large majority of students do express a certain amount of nervousness before the examination. Cases have been reported of students having a nervous breakdown by the sheer pressure of the enormous physical and mental effort required in preparing for the examination. Some students do not sleep for days before the examination, ending up as physical wrecks before the examination.

To aid students preparing for the JEE, a number of tutorial institutions have sprung up vying with each other in offering various kinds of courses ranging from four weeks crash courses just before the examination to one or two-year long correspondence cum contact programmes. It is interesting to note that these tutorial institutions themselves have acquired certain prestige by claiming the success of the students to the 'coaching' offered by these institutions. One prestigeous coaching institution makes its own preselection of candidates by admitting only those students who have obtained at least 80% marks in their previous (i.e. Higher Secondary Examination at the end of 10 years of schooling) examination conducted by the respective State or Central Board. They offer incentives like prize money and a free holiday for the top 100 rank holders in the JEE. There is yet another 'coaching' institution which offers prize money ranging from Rs. 1,00,000 (equivalent to twice the annual salary of a senior professor in the IIT!) to Rs 20,000 for the students obtaining the top 5 ranks. The coaching is quite expensive but rigorous. Some students to make doubly sure of their success take private individual tuition in Physics, Chemistry, and Mathematics, paying a lot of money to the tutors in addition to the correspondence courses. Such is the severity of competition.

Studies of Manger (1975, Messick et al. (1981), Slack et al. (1981) have discussed the impact of coaching in improving the performance of commonly used admission criteria like the Scholastic Aptitude Tests (SAT) scores. No attempt has been made in this study to analyse the role of coaching on performance. Here the focus is on the value attached to coaching as an aid in preparing to take this highly competitive examination.

Students reported that they started the preparation for the JEE ranging from one to twenty-four months before the scheduled date of the examination. A large majority, that is, 35% report starting preparation nearly a year ahead of the examination, 8% of the students have reported starting preparation as much as two years in advance of the JEE. The bulk of the remaining students prepared for at least six months.

Every year the JEE is held in the first week of May. The three months before the JEE is a crucial period. 42% of the students have reported that they started working seriously for the JEE about 1 to 3 months and 26% about 4-6 months before the JEE. 14% of the students have reported working seriously for a whole year before the JEE. A large majority of students plunge deeply into the preparation for the JEE immediately after their Higher Secondary Board Examination finishes sometime in late March.

Analysis of the reported average time spent (Table 1) by students in different rank ranges showed that there is no significant difference in the average time put in by these students. This perhaps indicates that success in the JEE is a function of both basic ability and the quality and quantity of effort put in. In other words, putting in the same amount of effort, one student obtains a higher rank than the other and this can be attributed to the inherent ability of the student and the quality of preparation put in. As a corollary, it can be stated that even students with higher basic ability have to prepare for the JEE to be successful. It is therefore quite understandable that the students have realized the need for preparation and do prepare for the JEE, if they are serious about getting admission.

Ranking in the JEE is a very important aspect. Most important, the rank decides the choice of the branch of study and institution of study. Secondly, there is a lot of prestige attached to obtaining a good rank in the JEE. In fact, the names of the top rankers are widely advertised in the media like newspapers and magazines. Even after the admission formalities are over, the identification of a student as a prestigeous high ranker in the JEE continues throughout his stay in the IIT and at times even beyond his IIT tenure.

PATTERN OF COACHING AIDS:

A very large majority of students, i.e. 83%, have reported taking coaching for the JEE and all of them have made use of the various correspondence courses given by private organisations. About 20% of the students have reported taking additional personal tuition in mathematics, physics, and chemistry.

Content analysis of the responses to the question 'What are the factors, according to you, which are responsible for your success?' shows that there is a large emphasis on the preparation made for writing the JEE. Hard work and effort has been mentioned by a large number of students supporting the large preparatory time reported by the students. Students have used expressions like 'slogging' 'no play' to indicate how much effort they have put in. Hard work has been qualified by terms like good, planned, systematic, regular, sincere, sustained, concentrated, continuous, patient, tireless, uncompromising effort. Emphasis has also been given to high motivation, determination, self-confidence, optimism, perseverance, dedication, will power to succeed in the JEE. One student has reported 'desperate to get in' was responsible for his success!

In addition, many students have reported the help they got from the coaching classes and from their senior students or relatives who are already in the IIT. Some have attributed the success to their ability and intelligence.

The student is required to face two important examinations, namely, his twelfth standard Board Examination and the JEE in a very short interval of time. Some students find it difficult to cope with the preparation for two examinations at the same time. Though in general, the content of the examination for both these examinations are very similar, the students feel the need to prepare for each of them separately as the mode and depth of examinations are different. 60% of the students felt that preparation for the board examination did not interfere with their preparation for the JEE, the others felt that there was an interference. For those students who are not very confident of getting through the JEE, this problem of interference is crucial. Admission to most other university courses are dependent on the grades at the 12th standard Board Examination and so it is important that the student should do well in the Board Examination and cannot afford not to prepare for this important examination.

IMPLICATIONS:

Over the years the number of students attempting the JEE has been increasing and has crossed the 70,000 mark now.

Relatively, the competition has increased tremendously exerting greater pressure on the students resulting in an increased amount of preparation and effort for success.

Though there has been some changes in the contents of the JEE examination, basically the style of examination has remained the same leading to a high degree of stereotyped testing. This has resulted in the JEE becoming highly trainable. The tutorial institutions are responding to this situation by extending the coaching period for anything upto four years. The pattern of examination is so well established now, that tutorial institutions are able to give a rigorous and comprehensive training focused solely on the requirements of getting a good grade in this examination.

Since the performance in the JEE is so dependent on the amount of preparation that goes before the examination, even students who are basically competent are left with no choice but to put their nose to the grinding stone, if they want to succeed in this highly trainable examination.

This raises a number of questions regarding the desirability and validity of this type of examination. This test might have the predictive validity in that there is a correlation between the performance in the JEE and the subsequent performance. Is it possible that this JEE selects students who have a high degree of examination orientation and these students do well later on since the subsequent courses are also highly examination oriented? Is it possible that this type of examination screens out to a large extent students who are creative and imaginative but not examination oriented? It would be worthwhile studying the highly examination oriented and not so highly examination oriented students' relative performance in the JEE and the subsequent performance. If the objective of the IITs is not just to train highly examination oriented students at the expense of providing opportunities for students who are creative and imaginative, then what is the alternative selection procedure to identify these creative and imaginative students?

It was pointed out earlier that studies have shown that even SAT scores were influenced by coaching. Considering the varied systems and highly variable quality of school examinations available in the country, and the large number of students clamouring for admission to professional education like technology especially in quality institutions like the IITs, finding a more appropriate and viable alternative for selection of students seems to be a tall task!

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Table 1: Ranks obtained in the JEE and the percentage of students reporting the number of hours of preparation per day

	Percentage of students reporting Hours of preparation per day						
Rank obtained	1-2	3-4	5-6	7-8	9-10	10 & above	N
1-200	18%	44%	27%	7%	3%	1%	100
201-400	22%	46%	27%	4%	0	2%	83
401-600	20%	39%	23%	11%	0	7%	82
601-800	16%	49%	22%	8%	2%	3%	63
801-1000	10%	46%	25%	7%	5%	7%	83
1001 & above	19%	31%	20%	18%	4%	7%	114
Total Percentage	18%	42%	24%	10%	2%	5%	525

JUSTICE IN ACCESS AND QUALITY IN SELECTION

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Full many a gem of purest ray serene,
the dark unfathomed caves of the ocean bear,
full many a flower is born to blush unseen,
and waste its sweetness on the desert air.
- Gray's Elegy

1. Introduction

Universities, by their very name, have to be selective in admitting students. This poses a problem either way: if they are liberal, they will be accused of watering down on quality; if they are strict, they will be charged with social irresponsibility. These days the latter pressure is so high that the concept of academic independence is being rocked to its very foundations. Particularly, in India, it has brought ruin to virtually all her venerable and once famous institutions. In several other countries, quality has not been allowed to blossom at all. The new political masters evince little or no pride in an elite institution like say, Heidelberg. Also, when they see that some institution is doing well, they see it not as an investment for the future, but as another opportunity to exercise their political patronage.

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Political interference in academia is nothing new; it has been there in all climes and in all ages. However, if the politicians are able to get away with their demogogy, it is because, as in the famous lines of Thomas Gray quoted above, many a competent person is unable to make it to the portals of the university, and in consequence, the university is seen as a bastion of privilege, designed to keep out the deserving masses and as a sinecure for those whose main qualifications are their parents.

There is some truth in this charge. The thread of the argument in this article is that the universities must, for the sake of their own survival, do all they can to rectify this situation where a large proportion of students are left out only due to the accident of their birth and not due to their lack of innate ability. The problem is both, to whom they are born and where they are born. It may not lie within the powers of the university to rectify this unfortunate situation; it is, in fact, not its direct concern. Yet it would have failed in its intellectual responsibility, if it did not discover and propagate fruitful ideas, which provide greater and greater opportunities to all those who have the innate capacity to participate in university education. This is particularly true of select institutions, where the pressure on admission is very high.

2. The Indian Untouchable Problem

In India, the problem of social disadvantage is more acute than in many other countries including the U.S., because we in India have the burden of centuries-old discrimination. The untouchables, who form 15 per cent of the population, have been systematically kept down and the tribals who constitute another 7.5 per cent of the population have had litte or no opportuny to participate in modernizing civilisation. As at present, these communities cannot compete on equal terms with the rest of the population. The Indian government's cure for this situation is to reserve exclusively 22.5 per cent of university admissions and professional vacancies (including in some cases on the faculties) to members of these disadvantaged communities. This has helped many of them to attain positions which they would normally have not reached. It has also created problems where skill is all important - for instance, in mathematically oriented fields like advanced engineering.

Till recently, I was the Director of the Indian Institute of Technology, Madras, one the most prestigeous institutions in India. It is one of five established by a special act of Parliament as institutions of national importance. The pressure for admission is so high that some 70,000 aspirants from all over the country write a gruelling entrance examination for the thousand and odd positions available. As to the reservation system, it often happens that the socially disadvantaged class of students are admitted with barely 15-16 per cent marks while the regular students in the same class may have a minimum of 60 per cent or more. In consequence, undertrained students are catapulted into a competitive situation which is beyond their capacity to cope with. We have had a suicide, one of our students will have to spend the rest of his life in an asylum, and many others are worse off than what they would have been if they had not joined us.

The political response to these adverse reactions is a demand that we lower our standards. As a parliamentarian put it, "what we need is Indian standards, not international ones" (indiresan, 1984). I can assure you from personal experience that the politicians can make life very unpleasant. India, of course, is still a free country; we can resist, but not with much effect, because India is also a democratic country; and because those left out have more votes than those who manage to get in.

3. The Political Wolf and the Academic Lamb

It would be correct to argue that the university cannot be held responsible for all the neglect that the society, and even the politicians, have practised over the years. We can argue that we can only make a fair selection of the material that is left at our disposal, that we cannot help it if some communities are backward. This does not cut much ice. The politician is exactly like the wolf in the fable of the Wolf and the Lamb. Like the lamb, we may plead that we are drinking the water only downstream, but for the wolf of a politician, any excuse is good enough. Particularly, if a university is run well enough to become prestigeous, it becomes too tasty a morsel to let go. As a national institution, we in the IITs have actually been rather lucky. In the state government institutions, the situation is far worse. Some time ago, we did the computerisation for entrance to professional institutions for one of the Indian states. Some 8000 students took the test and they had to be brought under 32 different categories - according to region, religion, community etc. The highest performer who could not be admitted had a rank of around 300, the lowest who squeezed in was eighth from the bottom. The pressures can indeed be so very fantastic.

4. The Extended Social Responsibility of the University

When the social and political pressures are as extreme as this, the universities have got to find some suitable solutions on their own. Traditionally, the universities have assumed that their responsibility is confined to those who have the ability and the pre-training necessary to undergo the rigors of a university education. In the present world, in the interests of their own sanity, the universities must now see to it that all those who are able will get the pre-training necessary to get into a university on merit. It is also in their own interest to see that their catchment area is as large as possible. If they fail to do so, they are the ones who will suffer most and, intellectually speaking, deserve the blame most. Thus, the university has to interest itself in the philosophy of school education and also on the techniques of selection.

The problem may then be stated as follows: what kind of an educational system would ensure that a reasonable distribution of training facilities will be available to all communities, in all regions and for all classes? Moreover, how to ensure that talented children are provided with educational facilities that commensurate with their ability? Finally, how to ensure that the selection is made as reliably as possible and is also seen to be reliable?

The universities must assume the leadership for the solution of these questions.

5. The question of Social Justice

The literature on social justice is extensive and a readable survey is available in Sen (1984). Sen points out eight different ways a contentious demand can be resolved. Shorn of technical verbiage, these eight approaches to "justice" may be summarized as below:

Sen's Eight-Way Path to Justice

1. Sum utilitarianism: Give it to the most competent
2. Marginal utilitarianism: Give it to the most promising
3. Minimax: Give it to the poorest
4. Equity: Give it to the one who needs it most
5. Labour rights: Give it to the one who made it
6. Property rights: Give it to the one who owned it
7. Libertarianism: Leave it with the one who has grabbed it
8. Relationship rights: Give it to your son

Each one of these methods can be justified in some form or other and in fact, is practised in some form or other by the universities. For our present purpose, the problem may be summarized as: how to make the most talented as skilled as possible even if they suffer from the utmost social and economic deprivation.

This has two facets: (a) access and (b) selection. Access should be wide open to all, and selection must be fair, accurate, efficient and be seen to be so.

6. The Problem of Selection

Let us consider the physical problem of selection first. The situation is like hitting the bull's eye in target practise - a near miss is as bad as a mile. Consider two candidates with unequal skills; their probability of hitting the bull's eye may be represented by the two Graussian curves as shown in fig. 1.

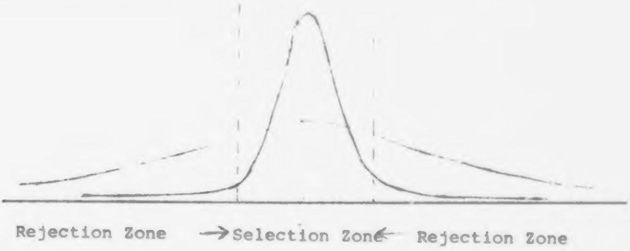

Fig. 1: Error probabilities in selection

The deserving candidate A has a finite, though small, probability of missing the target and the undeserving candidate also has a small, but definite probability of hitting the target. So two kinds of errors are possible: (a) missed ability and (b) false promise. These probabilities can be described mathematically, but that is not so important at this juncture. What is more important is how to reduce these two probabilities of error.

If the zone of selection is widened, the probability of missed ability will decrease, but that of the false promise will increase. Let, as in an example, the zone be such that A will get in with 99 % probability and B with 30 % certainty, that is, the probability of missed ability be 1 % and the probability of false promise as much as 30 %. If this experiment is repeated a second time and the candidates are expected to succeed on both occasions, the probability A will increase to 2 %; but B will go down to 9 per cent. A third selection will raise A to approximately 3 % and lower B also to a similar value. Hence, it is desirable to increase the stages of selection, if we want to minimise errors in selection. Also, we shall have to devise our tests in such a way that the probability of selection is high at each stage; the concern should be far more to ensure that no competent candidate fails than to worry if undeserving ones slip through because they will in any case be filtered out in the subsequent tests. In other words, the tests should not be much too difficult but several in number.

7. The Question of Access

This need for multi-stage selection may be usefully employed to improve access, particularly its disadvantaged groups. For these groups, the major problem is access to good pre-university education. This is particularly true of poor countries. As Mingat and Tan (1985) have pointed out, poor countries tend to emphasize university education at the expense of school education, particularly primary education - in terms of the per capita income, the developing countries spend per student 7,5 times as much on higher education than the developed countries. This leads to an unstable, top-heavy educational system. This arises out of the populistic postures of the politicians - it is more useful to have a college of whatever sort and a school of whatever sort, than only good schools. In consequence, quality education for all remains a distant dream.

To reduce this problem financially and academically to a viable level, at least the top stream in the primary schools may be sent to better endowed middle schools, and a further selected batch to select high schools. This will spread the process of university selection over several stages and as explained above, lead to better discrimination between the deserving and the undeserving.

Such multi-stage screening through select schools is nothing new. The mere admission to certain schools increases dramatically the chances of admission to prestigeous universities like Oxford or Tokyo or the IITs. However, it is in the admission to such schools that the greatest social injustice is perpetrated, rather than at the university level. The solution is not the elimination of such privileged schools, but the removing or at least minimising the privileged admission to such schools.

Virtually, all this is beyond the university's control. Still, the universities can try one experiment on their own. They may select the students from the disadvantaged groups, say, two years in advance, perhaps two or three times as many as required. These few students may then be provided with high quality education. Then the university, instead of having to rectify twelve years of bad schooling, will have to compensate only ten such bad years and will have two extra years to do so.

8. Conclusion

There is a definite social and political problem not only in India but in many other countries, according to which an unacceptably large number of basically talented children do not make the grade to the universities. This is a loss, as much to the university, as to the concerned individuals. The political pressures to rectify this situation are calculated to lower university standards rather than raise the quality of pre-university education for everybody, at least select streams should have such a facility. The minimum the university should do on its own in this situation, is to select the disadvantaged students a couple of years in advance and arrange to provide directly or indirectly remedial education so that the probability of success is increased. This is also useful in another way because multi-stage selection is better than single-stage selection. Hence, a minimum of two stage selections, the first conducted reasonably early, is recommended as a better alternative to the present, last-minute single-stage selection.

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QUALITY AND ACCESS : A DUAL-CRITERION ADMISSION SYSTEM FOR HIGHER EDUCATION INSTITUTIONS

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1. Introduction

By the time they reach university, some students, through no fault of their own, will have had an inferior education and be academically disadvantaged. Other students, perhaps equally talented, may not be admitted at all. The cost to the student is obvious. Equally important is the cost to society, particularly when opportunity is perceived to be related to race, class or sect.

Access to university and the quality of university students are important issues in South Africa. With some of the explicit racial barriers being lifted, the stark contrast in the quality of education in the various schools, particularly between black and white schools, become more apparent. The problem of dealing equitably with students from inferior secondary schools is particularly important.

In this paper an admission system aimed at dealing with these problems is presented. In this system a student may prove him- or herself worthy of admission to university by satisfying either of two admission criteria.

As a first criterion for admission the student's performance is compared with the national average. In South Africa a weighting system based on results obtained in the usual matriculation examination (the matric rating) will be used. The second criterion compares a student with his peer group, that is the other students in his final year school class. This second criterion is designed precisely to find the gifted, but academically disadvantaged students that the first criterion excludes.

The admission system is described and contrasted with other admission systems in section two. In section three the assumptions are tested empirically, using a statistical technique in which the sample acts as its own control group. Finally the advantages of the system are discussed.

2. Access and quality: Can they be combined?

We perceive the problem of quality and access as follows: How do we select students with the best academic ability without prejudicing students from a poor academic background?

One line of research has been the attempt to measure academic potential directly. Despite widespread use of standardised aptitude tests by higher education institutions as part of their admission processes, these tests remain controversial (e.g. Jencks & Crouse, 1982). Furthermore, these tests ignore some of the important qualities necessary for success at university, e.g. the ability to sustain motivation over an extended period of time. Research has indicated that standardised aptitude tests are generally worse predictors of success in university than high school records (Slack & Porter, 1980).

Opening the university's doors wider also presents problems. In costing such an exercise, one must include the effect that stretching the existing facilities has on students already in the institution, particularly on other students with a poor academic background. Furthermore, there is the frustration experienced by the unsuccessful candidates often at university under a false apprehension, and the high cost of tertiary education.

As a first step towards solving the quality/access problem the authors proposed a two-criterion admission system (Gering & Zietsman, 1983 & 1985). The second criterion acts as a control on the quality of secondary education.

The admission system can be summarised as follows:

(i) The first criterion for admission is the national matriculation examination. A student's performance in the final school examination is generally regarded as the best single predictor of success in university (Entwistle & Wilson, 1977), and a study conducted at a South African university confirmed this finding with regard to the local matric examination (van Wyk & Crawford, 1984).

(ii) The second criterion is the student's rank in his/her final year high school class. The authors have shown (Gering and Zietsman, 1983) that the students' percentiles provide a direct measure of their academic ability. This measure depends on the fact that a typical high school class (of about one hundred students) is a statistically meaningful sample. In addition the relevant cutoff percentile can be directly related to the percentage of applicants admitted by using the first criterion.

Clearly a student who has risen to the top of his school class is talented. However, if his entire matriculation class has performed much worse than the national average, his results may still disqualify him from admission on the first criterion. Such a student is gifted as is shown by the ability to study under difficult conditions, but disadvantaged as seen by the performance of a statistical sample (his peers) under similar conditions.

Using each final year class as a statistical sample provides an independent measure of two important variables, i.e. (i) academic ability and (ii) academic background. We use the first variable as an admission criterion and we test the validity of the underlying assumptions using the second variable.

3. Research procedures

3.1 Background to the study

The study was based on student performance in

(1) a first-year (freshman) physics course at the University of the Witwatersrand (Wits) where

students are admitted irrespective of race or class; and

(2) first-year courses in botany and chemistry at the Rand Afrikaans University (RAU) where the students are predominantly white.

Both these universities are investigating alternative admission systems.

3.2 Sample

The sample consisted of 425 first-year students in physics, 620 students in chemistry and 191 students in botany. In both universities students come from schools in which the university entrance pass rates in the matriculation examination range from below 5% to above 95%. Their marks range from straight A's to straight E's. The students at Wits come from nine education departments, whereas the students from RAU come predominantly from one.

3.3 Statement of hypothesis

While the student's percentile is a measure of his ability to perform academically, the fraction of students in his class who gain a university entrance is a measure (again with a well defined error) of the student's background. Given two students from different backgrounds but with the same matric rating, the hypothesis is that the student with the worse academic background should perform better at university than the one who had a better background since they are now on a somewhat more equal footing.

3.4 Experimental procedure

(i) The matriculation ratings of all the students in the sample are correlated with the relevant final year-mark. We note that a student from a school with a low pass rate, thus from a poor academic background, can have a good rating, while some students from superior schools have poor ratings.

The correlation of ratings and marks obtained enable us to obtain a predicted mark, i.e. how a student with a certain rating is expected to perform. The predicted marks are therefore determined by the entire sample and the students act as their own control group. A quadratic fit is used where appropriate to determine the curve to the desired accuracy. The matric rating is a very good predictor of the first year result (van Wyk & Crawford, 1984).

(ii) Next, the students' backgrounds are assessed by calculating the fraction of his/her matriculation class who obtained a university entrance pass.

(iii) The improvement of each student, that is the difference between the final mark obtained in either physics, chemistry or botany and the expected mark which was calculated in (i), is calculated.

(iv) Finally, the improvement of each student is then correlated against his/her respective background.

4. Results

The correlation coefficients between the students' improvements and their school backgrounds are reported in Table 1 (Wits) and Table 2 (RAU).

Table 1

Correlation between students' improvements and their school background.

First-year course	n	r	m
Physics I (1981-1983)	425	-0.25	-0.15 ± 0.03
Physics I (1981 only)	158	-0.35	-0.22 ± 0.05
Physics I (1982 only)	146	-0.26	-0.16 ± 0.04
Physics I (1983 only)	111	-0.21	-0.15 ± 0.06
Academic support Physics 1983	88	-0.29	-0.23 ± 0.04

Table 2

Correlation between students' improvement and their school backgrounds

First-year course	n	r	m
Chemistry I (1984)	210	-0.38	-0.38 ± 0.06
Chemistry I (1981-1984)	620	-0.28	-0.24 ± 0.03
Botany I (1981-1984)	191	-0.14	-0.10 ± 0.05

(i) The correlation coefficients show a clear trend, i.e. the students who deserve a second chance in terms of admission to university are those who benefit most from it.

(ii) The findings indicate that the students with the poorer academic backgrounds improve over the time scale of one year - on average roughly ten marks over students from good schools.

(iii) The analysis was not performed on any second or third year groups. However, since we are relating the students' backgrounds to an improvement in performance, it is not unreasonable to expect the improvement mentioned in (ii) to continue. The "disadvantaged students" could well go on to distinguish themselves and their universities academically.

(iv) Given the large fluctuations in students' marks due to extraneous factors, the correlations reported above are high. Combining these results with other variables such as the results from aptitude tests, could provide a stronger indicator (Entwistle & Wilson, 1977).

5. Advantages of the dual-criterion admission system

(i) Positive action: The two-stream selection policy is aimed at positive action - the rectifying of past discrimination. The encouraging evidence is that those people most deserving of a second chance are the most likely to gain from the use of the policy.

(ii) Automatic warning light: The system provides an automatic warning light and automatically identifies schools which have below average results. It is hoped that in some cases this will result in remedial action being taken at secondary or even primary level.

(iii) Simplicity: The inherent simplicity of the system facilitates easy implementation. Since the second level relies on individual schools, it can be implemented partially or in full.

(iv) Academic support: Positive steps can be taken by the university to support those students who were identified as being gifted but lacking the crucial academic background.

(v) Motivation: Perhaps our most important point is the self-fulfilling nature of labelling. While most bridging or supportive programs suffer from a negative stigma, the proposed admission policy will label the students clearly as gifted but at the same time disadvantaged. This should improve the students' attitude to their work as well as the lecturers' attitude to the students, and will be reinforced by cumulative causation. Judge Douglas ruled in the DeFunis case (with reference to the landmark decision in Brown v. the Board of Education) that "... a segregated admissions process creates suggestions of stigma and casts no less than a desegregated class room ..." (DeFunis v. Odegaard, 1974: 1719).

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WOMEN IN ACADEMIA

THURSDAY, 17 JULY

1400 - 1530

THE EFFECT OF GENDER ON PEDAGOGY AND PRACTICE

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Educational institutions as we know them were founded and fashioned on the ideas and the thinking of men over the past several thousand years. The established practices of intellectual discourse as well as the form of knowedge itself were shaped by this half of the population. It has been only in the past two decades that the number of women in higher education has increased until now they constitute more than half of the population at educational institutions. This new population and the demands of women within and outside academia require that a closer examination of gender difference and as well as the effect of gender difference be conducted. The purpose of this paper is to examine the effect of gender difference on pedagogy and practice in the college classroom and to propose a typology to assist faculty in designing educational experiences for both women and men.

Piaget provides the foundation for my thinking about the process of education. His concept of equilibration provides a main organizing construct in which continuous interaction includes not only the object environment described by Piaget and many working with him, but also interaction with people and with ideas. In an expansion of Piaget, Perry(1970) describes the intellectual and ethical journey made by young men as they construe the relationship between self and truth, knowledge, authority etc.at one educational institution. The similar yet different journey of women from various educational settings across the age span is descibed by Belenky, Clinchy,et al (in press).

The intellectual journey of women (Belenky et al)is a second source for my thinking. Clinchy, Belenky et al 1985) identify a style of knowing, connected knowing, which comes from personal experience. They join work by Gilligan(1982) and Lyons(1983) who suggest that women experience a connected sense of self, while men experience a more separate sense of self and morality. Bakan(1966) proposes a similar concept in which some people, usually men, develop a sense of agency, and others, usually women, develop a sense of communion. Clinchy and Zimmerman(1984) suggest that connected knowers use a believing approach first identified by Elbow (1973), while separate knowers tend to use a doubting approach. Individuals who use the believing approach learn through their closer connections with others. They learn through personal relationships and the experiences that come from these relationships. They also learn through listening to and observing other peoples' experiences. This creates the ability to be empathatic. Separate knowing on the other hand is more removed from the personal. It is characterized by separation of self from the object; the less involvement of the self the better."Feelings and personal beliefs are rigorously excluded."(1984,p.10). Separate knowers use the doubting mode of learning. In this mode the student is asked to justify and defend ideas, based on finding something wrong with a statement. The identification of these two different modes of knowing and the dominant use of the doubting mode in higher education means that more than half of the college population is not being taught in a congruent epistemology.

In a critique of educational theory, philosopher Martin (1985) identifies a similar discrepancy that speaks to the different life experiences of men and women. Martin states that the views of major philosophers Plato and Rousseau provide an education that reflects only partial and limited ideas for women's education. The education that is provided emphasizes the use of reason, self-discipline, independence, and rationality. In this educational model feeling and emotion are carefully controlled. This has been the model for subsequent generations from Greece to the present in which connection to others is minimized and distance as objectivity and rationality have been the genre. Martin describes the characteristics of reason and rationality as education for the productive processes of society: the political, economic, and cultural. She suggests that there are reproductive processes, which are essential to be included in thinking about education. Reproductive processes are associated with the care and nurturing of other human beings. Caring for others results in a different way of thinking about self and about the world. Chodorow (1978), Gilligan(1982), Lyons(1983), and Belenky et al (in press) are examples of new scholarship which begins to describe the perspective that derives from this different life experience.

A colleague and I used the work of Belenky et al to examine a small self-contained program to understand the teaching process and effects of specific teaching methods.

We investigated the effects of a university program whose faculty use developmental theory to guide the curriculum matched to the developmental status of the students. (Abell, et al 1985;Bransky and Abell,1986). We found that students in the experimental group, composed of women in the two year Early Childhood Associate Degree Program, in two years,showed a statistically significant greater advance in intellectual development than a comparison group of matched students at large from the same college (U=28,p<.01 with U=3 for p=.01).

As part of the data collection we asked both the experimental group and the comparison group, How do you learn best? The most frequent responses were the following:

Doing- hands on experience with children
Making and presenting projects/educational materials in class and using them with children in practicum
Class discussion in which one's own ideas are expressed, others ideas are heard, and other points of view are presented.
Being involved- participating

Some of the students described their experiences in this way.

> *Experience is your best teacher. I can see you can read about it, but when you're actually doing it, let me tell you, it's two different things...I think you need both. I think you should know the knowledge of what it takes to do it. But the experience is just step above.*

> *Doing things... you're doing it yourself or seeing it done. Touching or doing it yourself. It's alot better than just watching them. Even seeing is better than just hearing it.*

> *When making a project... and we do it with the kids... or have other adults try it, you can see the frustration and the emotion, everything that goes into it, and how the kids learn. and so if it was just a lecture, he'd (the professor) tell you that and say OK, I have to learn this and this, but you never see the frustration and the emotions - or how the kids... learn to do it.*

The experience of doing, of being involved, of having something like a real life experience is powerful and effective learning. Students prefer the subject, children, to be real to them; they want to experience the subject first hand. They want to be close to the subject and use many parts of themselves - doing,touching,seeing and being aware of emotions. The sense of being active,being involved emerges as central. A contrasting experience ,an example of the usual college teaching which students in the study find much less valuable is lecturing. Descriptions of this are:

> *Especially when they are talking at you and you're writing things down, it's mechanical.*

> *When teachers just lecture it feels like the stuff never pertains to you because you don't get to do it. You don't get to see it.*

Here the distance of the individual from the subject creates a void which is not possible to connect to or to find meaning in. The use of language for conceptual formulations and descriptions of phenomena removed from personal experiences is less meaningful and less effective. Our data are similar to conclusions in the study by Belenky et al(in press) which attest to the importance of personal experience. Clinchy et al(1985) state that women ages 16 to 65 from varied settings

> *were not opposed to abstraction. They find concepts useful as ways of making meaning of their experiences. But they balk when the abstractions precede the experiences or push them out entirely. Even the women who were extraordinarily adept at abstract reasoning preferred to start from personal experience.(p.34)*

The description by students of the importance of experience echo the words of Dewey (1958),who said, *education must be based upon experience-which is always the actual life-experience of some individual.*(p.113). Experience is a central concept in the proposed typology for designing educational environments. I would like to clarify what I mean by experience. The dictionary definition from the same time as Dewey's book (1958) begins with this.

> *The actual living through an event or events; participation in any thing through sensation or feeling; the real life as contrasted to the ideal or imaginary; actual enjoyment or suffering; hence the effect upon the judgment of feelings produced by personal and direct impressions as contrasted with description or fancies;*

A current volume adds the following connotations(1981):

> *knowledge ,skill or practice derived from direct observation of or participation in events;*
> and *the _um total of the couscious events that make up an individuals life(all that we know and feel and do, all our facts and theories, all our emotions and ideals and ends may be included)*

All these definitions are important in conceptualizing this typology which is generated from student and faculty interview data reported elsewhere.(Abell, Bransky, Squibb,1985)

The issue of gender is central to this typology . The female student of any age brings to the classroom different knowledge which results from a differing life experience. Her more connected experiences provide a different epistemology. The focus of the classroom where the emphasis is on the rational mind and the restriction of the class content to rational, abstract considerations limits women students and provides the male student with a less than complete understanding of the nature of human beings.

The proposed typology is organized around the concepts of connected and separate knowing. Connected knowing occurs when there is direct and personal experience with the subject. Separate knowing occurs when the subject is removed from direct contact and learning takes place through reading about the subject or listening to a professor talk. I propose the following typology for designing educational experiences.

1. **Direct.** This places the learner in actual real life contact with the subject. Students interact with the subject and with each other. The student uses all the different kinds of experience: actual living, skills and knowledge, and the sum total of the person's life experience. In this kind of educational experience, the student uses all aspects of him/herself: cognitive, affective, motor-behavioral, and neurophysiological. Because all aspects of a person are used and all kinds of experiences are used this provides a connected mode of learning, the most powerful method of learning for women. An example of direct learning is the practicum where students directly contact the subject, i.e. children.

2. **Semi-direct.** Here the student is not in direct contact with the subject. The student is removed from the subject and the real life experience with the subject. Separation and distance increase. Yet the student brings all the various kinds of experience which are used differently-in a less involved way. The cognitive aspect begins to dominate the learning experience. There is less reliance on and involvement of the affective, motorbehavioral, and neurophysiological. However, it is possible that certain aspects i.e. emotions will be salient when the content has emotional significance for the individual. Examples of this method are observing the subject either in a real life situation or by means of a film. Field trips are an example of observing.

Role playing simulates a possible real life experience. It is useful for skills and knowlege about self and other, but is not as powerful as direct experience.

Mediatory. This serves connecting and integrating functions. Here past experiences which have been formed through direct experience with the richness from all aspects of human functioning are brought to bear on mediating the connection between the past and the present. The present learning which may be primarily cognitive becomes connected with the rich resources provided by the individuals own past life experiences. The construction and provision of mediatory educational experiences are essential for learning which has meaning and significance for the individual and which become assimilated to the individual's behavior, feelings and thinking. Mediatory experiences occur in three ways:

a) build a bridge between the student's life experiences which may be present or past and the new direct, semi-direct or indirect experiences. Examples of this are journals, papers which allow the student to connect her/his own experiences and ideas with the theory/ideas being presented. Class discussion which focuses on clarifying ideas and helping students understand concepts is another example. Connections occur between what they already know and what new ideas and information they are seeking to understand.

b) Integrates information from various sources of learning and see relationships between one area and another. Theory is related to practice; the past is integrated with the present; content from other classes is related to the present topic. Small group and large group discussions, papers and journals are good examples here too.

c) Critical examination and comparison of different ways of thinking and doing, connected to one's experience. Here different points of view and different theoretical approaches are explored and evaluated. In summary, the mediatory mode is essential for assimilation of new ideas, new ways of acting and thinking. If not, the danger is that facts remain facts and are not related, examined nor integrated into the meaning context of a person's life.

4. Indirect. The student is completely removed from direct contact with the subject. This is characteristic of the separate knower. In an academic setting this takes the form of lectures or listening to others talk about the ideas of other people. This involves the use of symbolic processes that are abstract in conceptualization and use. The words of others, often many times removed from actual experience provide the knowledge. Often theoretical constructions demonstrably alter any resemblance to a real life experience. This kind of educational experience relies heavily on the cognitive aspects of functioning and is part of the rational mind and abstract thinking. Reading is another example of this kind of experience. Taking notes is similar and is seen by some students as passive or mechanical and not involved. The ability to think abstractly and rationally is essential for education, but not to the exclusion of direct and mediatory methods.

This is a typology which recognizes both separate knowing and connected knowing as part of the conceptual scheme. My purpose in presenting this typology is to bring greater clarity the effects of different epistemological structures upon learning and to suggest a model which will assist in creating effective educational experiences for all students, over half of whom are women.

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PSYCHOLOGICAL SEPARATION IN MALE AND FEMALE COLLEGE STUDENTS

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I planned this paper, roughly, at least, a year ago. Within psychology, my research specialty is individual differences. As an enthusiastic teacher, and recently, as a psychotherapist, I confess to engaging in sufficient intimate people watching that my profession as a psychologist seems a dignified disguise. It would be dishonest to say that I have not previously noticed that I am a woman, though some of my professional training indicated that I should assay to ignore and erase its consequences in thought and action, though not necessarily in appearance. In my early professional development, the women who called themselves feminists were seen, paradoxically, as distinctly unfeminine and undesirable. This paradox went unnoticed either in the sense that a double negative may produce a positive, or in the sense that control of standards of professionalism lay in the power to make membership in a feminist group undesirable. Thus feminine feminists virtually had to ascend from a walled up ivory tower, exitless, or so it seemed.

I began the research for this paper secure in the notion that finally I had figured out a way to describe the differences between the sexes in an intellectually acceptable way that insulted no one, while illuminating everyone. This introduction is a bit of an apology, apparently typical of women making assertions. I make it here in advance, because though my data will not support my assertions, I still wish to present them and argue to a certain extent for their validity and their usefulness as a way to think about men and women. (My observations and anxiety tell me that to argue that you are right, more or less, in the face of disconfirming evidence is stereotyped as a female characteristic, but actually practiced less apologetically by men.)

In this paper I plan to review some current notions about the psychology of women, and about psychological separateness, to report some pertinent research which my students and I have done, and finally to relate the data to my work with male and female university students.

This foray has left me with more questions than resolutions, and has convinced me that progress in the area of sex differences hinges on asking new questions as well as reducing the polarization and mutual rejection of ideas and data coming from warring factions. In this area I think much is to be gained by analyzing how the evaluative overtones of language mask underlying similarities in phenomena.

For instance, Sigmund Freud's statement that women are masochistic may not be essentially different from Carol Gilligan's assertion that women are altruistic, putting others' welfare and feelings before their own. This observation restored internal intellectual harmony for me as a closet admirer of both Freud and feminist psychology. My traditional training led me to believe it was wrong not to entertain the possibility of penis envy, yet children under seven were the only people who were able to talk about it unencumbered by prejudice welding them so rigidly to a conclusion that the thinking process was predetermined and hampered. Freud and Gilligan again agree that little girls are similar to their mothers while little boys are different; they agree that this two-fold fact has far-reaching consequences for the process of separation of the two kinds of children from the mother, an important factor in the development of personality of the two sexes. Again, a two-sided phenomenon emerges: For Freud, the women are dependent and emotional, while the men are independent and rational. For Gilligan, the women are more responsive and empathic, while the men are more independent and aloof.

A sizable number of women clinicians, working in collaboration with the Stone Center at Wellesley College have been developing a theory about the structure of the self and the nature of the identity of a woman as rooted in relationship, while the self and identity of a man is rooted more in achievement. In the ideal case a woman's self-boundary is more flexible and can include the needs, feelings and wishes of another, empathically, as one's own. In the less healthy case a woman cannot not include the other within the self boundary, even when the inclusion is to the detriment of both the self and other.

Gilligan and Chodorow, in concert with these clinicians, have been making the point that this is neither a bad thing, nor is it a lesser level of human development, but is a different way of being which has its own good and bad side. Assuming criteria could be agreed upon, there is a degree of inclusion/exclusion of the interests of others in one's own interests that is indeed both appropriate and helpful, while there is a degree which is inappropriate and harmful (of course this differs from situation to situation).

Coming from a somewhat earlier time, and a totally clinical, rather than sex differences oriented perspective, other theorists, notably Margaret Mahler and Heinz Kohut, have written about the separation-individuation conflict and self-psychology. In Mahler's observationally oriented research and consequent theorizing, she presents the separation-individuation conflict as one in which the infant, at an age close to 18 months, becomes cognitively able to recognize that he or she is a psychologically separate individual and thus can be abandoned by the mother. Mahler warmly informs us that much of the negativity of the terrible two's is in fact an assertion of the child's separateness rather than rebellion. In a certain sense one must say "no" in the separation process before one can say a meaningful, independent "yes." It would hold from Mahler's work that a certain rebelliousness or no saying both in the two's and in adolescence is a positive, albeit painful part of the process of full individuation; it allows agreement which is not merger, and disagreement which is neither abandonment nor rejection. This separateness, softened but not changed by diplomacy, is a prerequisite for good intellectual work.

Kohut describes the need of certain parties, who have "self psychology" problems, to be "mirrored". Mirroring refers to a kind of empathic understanding, similar to what Erik Erikson called "numinosity" or the holding glance, which mothers and other adults usually present to very young children. It is believed that through these positive interactions, mothers help children to experience what they (the children) feel and to learn to act appropriately. The clinicians anticipate that no mother can do this perfectly and that what is hoped for is a "good enough" mother (Winnicot's term) for the child to internalize a smiling holding figure to sustain him or her through unstable or difficult times. It is Kohut's contention that these self psychology problems take precedence over the more traditional, psychoanalytically oriented ones and that the therapist's provision of the positive mirroring enables the patient to form a cohesive self. Though he does not make the connection, much of Kohut's theorizing is in fact similar to Roger's notions that people need unconditional positive regard from their therapists.

Depending upon the degree of "good enough mothering," and upon transversing the stages of rebellion, individuals reach adulthood with a greater or a lesser degree of psychological separateness (that is, a tendency not to merge and confuse one's boundaries with the boundaries of others and presumably not even to confuse one's own accomplishments and possessions with the separate sense of self). In a rough sense the less one would feel like one's self as a function of loss or acquisition, success or failure, the less separate the person is.

Primarily as a result of the clinical literature, I became interested in the variable of psychological separateness as an individual differences characteristic. In particular, I anticipated that it would be related to other research I had done on fear of success (where success could be the symbolic equivalent of abandonment), self-esteem (which could not be stable until there was a stable self-structure), and the work with children of alcoholics who had both high fear of success and unstable self-esteem.

Linda Langford and I conducted a study in which we premeasured psychological separateness. We used a shortened version of Shostrom's Personal Orientation Inventory, which is purported to measure inner directedness or other directedness, and which has a series of items that corresponded nicely to the ideas about psychological separateness presented in the work of Mahler and Kohut. This initial study was designed to test whether the more separated people would be more likely to give appropriate help and the less separated people inappropriate help—either too much or too little; sex differences were neither a focus nor a controlled variable. There were more women than men who were willing to volunteer to participate in the experiment. In addition to premeasured psychological separateness, high, medium, and low self-esteem manipulations were included. Subjects' "intuitive knowledge of people" was ostensibly evaluated from an impression formation task of a 'real' individual. While the subjects were at work on a lengthy task, the results of which would interest them, a confederate of the experimenter intruded into the experimental session asking for help completing an overdue form she couldn't have completed herself. Then she asked for help making duplicate copies of the form, something she could presumably do herself. Help with the initial form was deemed appropriate; help with duplicating was inappropriate. Giving either kind of help required the subjects to put the other's interests ahead of their own.

The results of this study were somewhat surprising; in a nutshell (Table 1), all the help given was appropriate; the premeasured less separate subjects gave more help, and among the less separate most help was given by those whose self-esteem had been manipulated in the high direction. Since the underlying assumption of the clinicians was that greater separation was preferable, and faced with the surprise that the less separated gave more appropriate help, we were faced with the question: For whom is separateness better?

The next study was conducted with the purpose of establishing two propositions as a baseline for further work: First, Witkin's measures of psychological differentiation (i.e., field dependence and the embedded figures test) would be correlated with the measure of psychological separateness as well as fear of success; and, second women would score as more unseparated on the measure of psychological separateness and more field dependent on both the rod and frame and the embedded figures tests. Though primarily referred to as cognitive styles, Witkin describes much the same psychological process of separation-individuation as does Mahler. Field dependent individuals are seen here as more similar to more psychologically separate individuals. They have separated themselves from the mother, have their own firm boundaries, and have an articulated self with an internal frame of reference. The field dependent are less separate and less differentiated. In the rod and frame test, field independent behavior is manifested by an individual's ability to use internal bodily cues about the position of the true vertical, and thus judge when a luminous rod is perpendicular to the walls of a dark room, despite the rod being presented in a rectangular luminous frame which is tilted. The measure of field dependence is degrees of error from the true vertical of the subject's setting of the rod. The embedded figures test requires the subject to find a fairly simple geometric figure embedded in a series of fairly complex colored geometric patterns. Speed of disembedding the figure is the measure of field independence. The paper and pencil questionnaires were administered in class and the Witkin tests were administered individually to 75 female and 32 male undergraduates in three psychology courses. The results summarized in Table 2 reveal no sex differences on the measure of psychological separateness, and no significant relationship between the measure of psychological separateness and either of the Witkin measures. As anticipated, fear of success and psychological separateness were strongly positively correlated (r = .55), and the embedded figures test and the rod and frame test were also positively correlated with each other (r = .33). In this study women were, as anticipated, more field dependent on the rod and frame test, yet, due to four extreme scores among the males, the men were more field dependent on the embedded figures test. Since Witkin's measures per se were not the primary interest, and since the men were not more field dependent on the embedded figures test when the four outlying males' scores were deleted, I will not discuss these reversed sex differences in this paper.

Mahler and Kohut do not discuss sex differences in the separation-individuation process. They both assume that both women and men can be more or less separated. Witkin, on the other hand, consistently found women to be more field dependent, though he was careful to say that one is not better or "healthier" than the other. Gilligan and the clinicians working on this problem today assume that women are more empathic and interconnected with others. At this admittedly preliminary point in this thinking about women, it seems that much specificity and clarity is needed in the area of psychic separateness and sex differences. One immediate distinction that seems conceptually useful is between a structurally based ability-inability to be separate (structural separateness) and a voluntary or attitudinally based concept, indicating preference for either separatness from, or connectedness with, others (attitudinal separateness). These states may not be immediately discernable in either the measures of psychological separateness or in the observation of adults. I suspect that close observation of children and perhaps clinical observation (Kohut) of adults permits more of the distinction to be made. In the data I presented, the more separated individuals helped less, and the men and women who were psychology majors did not score differently on the measure of separateness. It is certainly not beyond the pale to think that men majoring in psychology may be either more interested in connectedness and helping than other undergraduate majors (and of course that women in other majors might be less interested in helping too). On the other hand the male psychology majors may be less separated structurally.

A related notion appeared in a study of fear of success done by Rick Schmid, a graduate student working with me. He found, as I had previously found, that individuals who fear success and are presumably low in psychological separation perform better and can succeed in cooperative groups while they sabotage their success in competitive groups. Schmid's recent study also showed that, regardless of whether the group was labeled cooperative or competitive, success fearers were able to succeed and not sabotage in the experimental condition when they were told that a within group survey showed that "people in this group are similar and like each other." Compared with previous research, the very powerful variable in this study for success-fearers of both sexes was "being liked by others." It was this variable, and not performance feedback (which was manipulated between excellent and average), which accounted for the good performance of the success fearers; while the excellent performance feedback accounted for the better performance of only the non-success fearers. In terms of the above distinction between structural separateness and interest-value separateness, the sucess fearers are likely to have lesser structural separateness. On the basis of the fact that fear of success is highly correlated with a fear of rejection but is not correlated with a need for affiliation, it seems likely that success-fearers do not as a group consciously prefer interconnectedness with others. Certainly, the manipulation of liking seems a simple social structure version of the Kohut principle of mirroring in the therapeutic situation.

I have conceived Schmid's results as indicating that the success fearers bring interpersonal needs and insecurities to achievement situations. When these needs are met, the result is good performance; the non-success fearers bring their own interpersonal security with them and seek different outcomes from the situation. One of the tantalizing possibilities in Schmid's results is the idea that certain ways of structuring social situations can rather easily compensate for personal deficits. Another issue that is well worth considering is that people perform well—achieve—for very different reasons, including intrinsic, extrinsic, and social motives. In Schmid's study, it is important to note that the liking of the other members of the group was a precondition for the success fearers to do well. We were not able to test whether being liked rather than some other motive was the consciously desired outcome of their performance, although the experiment clearly demonstrated that the success fearer's performance was most strongly affected by the group liking variable, positively affected to a lesser extent by the cooperative variable, and not affected by the manipulation of the perceived level of performance.

To summarize to this point, some ideas from clinical psychology on the topic of psychological separateness and empathy, and from the psychology of sex differences on the extent to which women more than men empathically include others in their definition of self, led to an experiment in which the psychically less separated gave more appropriate help to a needy other, at potential cost to themselves. A subsequent correlational study found that fear of success and a measure of psychic separateness were highly correlated, but that the measure of psychic separateness was unrelated to Witkin's two measures of field dependence (also assumed to measure psychic separateness). Further, it was found that for psychology majors, there were no sex differences on the measure of psychic separateness; the results on the embedded figures test were ambiguous. An additional study of individuals who fear success and are presumably psychically less separate revealed an increased ability to sustain good performance when they were working in a cooperative group, and particularly when they were given feedback that the members of their group had indicated that they like each other. Since the anticipated sex differences were not found on the measure of psychic separateness, it was suggested that further work was required in which a difference between psychic separateness in the structure of the self be differentiated conceptually and psychometrically from a strictly value or interest orientation in relationship with people. It was further suggested that the differences betwen the sexes be investigated in groups of men and women who differ by college major and/or profession in the likelihood of their value/interest orientation to others.

It from the work of most clinical writers that the adult motives underlying interpersonal relationships and achievement behavior are difficult to differentiate and to analyze. Until recently I had never considered seriously that individual differences in affiliation motivation, or need for approval might have deep psychic implications, though certainly they were related to anxiety. In other words, I took the more social-psychological point of view that assumes that the underlying structure of the self is roughly equivalent for all individuals, and that differences are largely matters of style and preference. The difficulties that most people experience when these motives get into conflict with each other, either because of competition, too much isolation, or too much togetherness in work situations, begin to reveal the complex interconnectedness not only of achievement and social motives, but also of deep structural differences in personality and the conduct of the parties who have them. It seems to me easier to be a theorist on clinical topics or a researcher in social psychology than to integrate ideas by bringing the richness of the clinical world into the accurate, controlled and discriminating world of the laboratory.

Yet, as college teachers, we make implicit and explicit assumptions about these matters in our everyday work, either in structuring courses, or in our similar or different treatment of male and female students. Recently, in doing clinical work with students, I have come to know many of them quite intimately. With the full understanding that university professors are not usuallly trained psychotherapists, and, even if they are, their primary task is to teach, I would like to share some of the observations and concerns particularly as they apply to the differences between the sexes that are pertinent to the research and thinking reported above.

For a multiplicity of reasons, including the increased divorce rate, the increased acceptability of women's having careers and families, and the either increased abuse and/or increased reporting of drug and alcohol problems, undergraduate students are coming to college from increasingly unstable origins. The soaring tuition fees, increased competition for post-college employment, the nuclear threat, and, in general, the rapidly changing times have served to increase not only the chaos of the family lives from which our students come to the university, but also the uncertainty they anticipate when they leave the university. There has probably been a dove-tailing of the increase in these socially disorganizing factors and the willingness of clinical theorists and social critics to notice them.

While I began the thinking and research outlined in this paper with the notion that women were in the structural sense less psychically separated than men, the research and the results have impressed upon me not only the difficulty of actually measuring psychological separateness (short of an x-ray of people's psychic structure), but the diversity of styles in which the psychic deficits are likely to be manifested by individuals and by the two sexes. The two differences that have most impressed me in my observations involve comfort with expressing feelings and attempts at integration of career and interpersonal life plans. The male students are much less likely to express their feelings or to seek help in a non-task oriented way. For example, I have never been approached by a male student complaining of test anxiety, but have been by numerous female students. Recently a young man who turned out to be in deep turmoil approached asking for only several books to read on fear of success. Female students would be more likely to ask to discuss their own fear of success. While the suppression of affective expression and of the request for help is a commonplace observation about men, I think it may be an important factor in unravelling the ways in which less separated males express themselves in relationships, though not necessarily on personality questionnaires.

The other recurring difference is the extent to which female students voice deep concern and conflict about whether they will be able to integrate serious work and family commitments in their adult lives. Unfortunately they try to solve these conflicts in advance of both the job and the marital partner largely on the basis of stereotypes of men and the work world, and with exaggerated sensitivity to the verbal statements of the young men in their present lives. The male students on the other hand seem to have sequenced the achievement and family tasks and are in less conflict. Their first priority is to get their careers in perspective and they say that they will later make the specific family decisions. Many of these young men feel very favorably about marrying women who work, but they do not worry about whether they themselves will be able to manage both. With particular respect to the young women the final difference I want to point out is that in my directly clinical work with female students, it is frequently the most dependent and the least psychically separated women who appear to have the least conflict about achievement yet who are the most disturbed about what their futures hold in terms of their interpersonal relations. Usually these young women require, as do the success fearers, a very secure relationship with a faculty person before these deep concerns come to the fore. Superficially, they behave somewhat more like the male students.

In summary, what I had anticipated to be a straightforward program of research on the relationship of psychological separateness and sex differences, turned out a not so tidy set of results. Given the greater difficulty for the men of expressing their feelings, and yet the absence of strong differences on the measures of psychological separateness, it seems that an important next step involves interviewing men in more depth than questionnaires make possible in order to obtain a clearer picture of the ways their sense of being unseparated may manifest itself. This position is vaguely reminiscent of Freud's conclusion about women when he asked "What do women want?"

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Table 1. Number of subjects who helped the confederate

			Manipulated Self-Esteem		
			High	Medium	Low
Premeasured Psychological Separateness	Separate	Female	1	1	2
		Male	1	0	2
	Non-Separate	Female	6	3	3
		Male	2	2	1

Table 2. Mean scores for males and females on Fear of Success, Personal Orientation Inventory, Embedded Figures Test, and Rod and Frame Test

	Fear of Success	Personal Orientation Inventory	Embedded Figures Test	Rod and Frame Test
Women	30.3 n = 102	39.1 n = 102	38.1 n = 74	5.5 n = 73
Men	29.2 n = 43	39.1 n = 44	50.9 n = 33	2.7 n = 32
Statsig t-test	ns	ns	p < .02	p < .02

Table 3. Inter Correlations of Scores on Fear of Success (FOS), Personal Orientation Inventory (POI), Embedded Figures Test (EFT), and Rod and Frame Test (RFT) for males and females

Women / Men	FOS	POI	EFT	RFT
FOS		.55** .58**	.009 -.007	-.05 -.07
POI			.16 -.004	.02 -.01
EFT				.33** .003
RFT				

** p < .025

Fear of Success: High score = high fear of success

Personal Orientation Inventory: High score = high other orientation

Embedded Figures Test: High score in seconds = high field dependence

Rod and Frame Test: High score in greater number degrees of error = higher field dependence

MISANDRY AND MISOGAMY:
THESE SAD YOUNG WOMEN

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I confess at the outset of this paper that its subtitle is not original. It paraphrases the title of an essay by Edith Hamilton which appeared in the Atlantic Monthly in May of 1929. Hamilton's piece was inspired by a statement of Joseph Krutch to the effect that idealism and the love of man and woman is no more. So the Greek scholar reaffirms her own faith in classical values, in love, and in the nobility of the human spirit. Aldous Huxley and Ernest Hemingway are two more examples of "these sad young men" who, to use Hamilton's own metaphor, shrink the world to the dimensions of their own gardens by measuring it by themselves. Before her death in 1963 this burgeoning group of misanthropes could be said to include many of the male writers whom today's feminists have labled denigrators of women. Tennessee Williams, Norman Mailer, Edward Albee, Arthur Miller--all of these and many more have earned a place in what Hamilton calls a generation disillusioned by the Age of Man's Domination by Machines.[1]

Our artists, claims Hamilton in an essay on William Faulkner, are escaping from nature by rejecting classical values in favor of what they view as realistic portrayals of life. Though in no way a feminist, she offers one paragraph on Faulkner's work which would gladden the hearts of those in Women's Studies:

> And his women? No one adjective or two can describe them. I confess his attitude to them puzzles me...Young women are not really human to him. He calls them "the Symbol of the ancient and eternal Snake." They are an embodied Menace to Man. Old they are more tolerable, but even in childhood, earliest childhood, they are already initiates of darkly secret rites. "They are born," Mr. Faulkner concludes, "already bored with what a boy approaches only at fourteen or fifteen with blundering and aghast trembling."

In a spirit of high humor, Hamilton describes Faulkner's Nobel

Prize speech--brief, less than a page in any of his books, but a piece of writing, she says, which may well outlive them all. For the speech lauded "'the old universal truths, love and honor and pity and pride and compassion and sacrifice,' from which he has wandered so far in his books." Without these truths, says Faulkner, a writer "writes not of love but of lust." In what books, asks Hamilton, did he himself write of love, and in how many books has he not written of lust?[2]

"No one pays any attention to Edith Hamilton's ideas anymore," one of our young feminist scholars who teaches Greek literature told me a few years ago. If this is indeed true, then I maintain that she will be recalled at a later time. She should be recalled by feminists above all, for she was a multi-paradox of our century. A brilliant scholar who did not begin to write until 1930 when she was sixty-three, she then, strictly because of her gifts and despite her gender, achieved world renown. It is particularly ironic that in 1957 a woman scholar should have been made an honorary citizen of Athens, for, as Susan Moller Okin attests, Platonic and Aristotelian philosophy helped support a long tradition of misogyny within the ancient Greek culture.[3]

Hamilton, in her study of the historian Xenophon, clarifies her awareness of the Greek woman's status.[4] She never condemns the Greek male, nor does she condemn the male of the 19th century in which she grew up (though she herself never elected to marry). She speaks honestly, however, about 19th-century women who "talked in tones of shocked purity about the horrid world of politics." Today's feminist would say that women were denied growth through being denied access to that world. Hamilton words the truth differently (my critics might say euphemistically) when she writes that women were "sheltered in large measure from the world of fact." This made them sentimental...for one is sentimental only about that of which one is ignorant.

> Women were not sentimental about their own facts; they were not often enthusiastic about dishwashing and child-bearing. When they talked as if they were, it was because they found it wise policy to echoe the unbounded enthusiasm men have always had for these pursuits.[5]

But sentimentality is also the sin, she says, of these American writers who despise human life, who have ceased to look within themselves, and haven't the ability to transcend their own experience. Could they do so they would laugh, as Jane Austen could turn her laughter at 19th-century social hypocrisy into brilliant comedies of manners. In The Greek Way Hamilton shows how the Greek Aristophanes lampooned the battle of the sexes much as Gilbert and Sullivan did in the 19th century. The woman joke, quips the Greek scholar...It is ever with us.[6]

But these days feminists refuse to see the woman joke as in any way humorous. Yet, though feminism may succeed in ridding our culture of many acknowledged sexual inequities, it will never defeat the human impulse to satirize human foibles. What I find so awesome is that, in all of feminist criticism, there seems never to be a smile. "Without a sense of humor," says Edith Hamilton of the sad young men, "one must keep hands off the universe unless one is prepared to be oneself an unconscious addition to the sum of the ridiculous."[7] Indeed, herein lies a real danger for the feminists in literary criticism. Overkilling with attacks on patriarchal domination may have the final effect shared by many such extremes--overcoming their readers with laughter.

J. O. Tate, in a review of Gilbert and Gubar's Norton Anthology of Literature by Women, includes a textual passage in which the editors excoriate the carpe diem Renaissance poets as exploitative seducers of women.[8] John Donne, the greatest loverpoet of them all, is singled out for special denunciation by Gilbert and Gubar in *The Mad Woman in the Attic*. "Love's Alchymie," say the authors, "with its urgent misogynistic imperative," is "...a similarly horrific...statement of sexual nausea."[9] In another passage, Donne dehumanizes women with:

> "Why hath the common opinion afforded women soules?"..After all, he noted, women's only really "spiritual quality is their power of speech, "for which they are beholding to their *bodily instruments*: For perchance an *Oxes* heart, or a *Goates*, or a *Foxes*, or a *Serpents* would speak just so, if it were in the *breast*, and could move that *tongue* and *jawes*."[10]

The Tate review of the new *Norton Anthology* claims "Virginia Woolf is everywhere."[11] Indeed, so is she everywhere in *Madwoman*--in fact, everywhere in most feminist criticism. If anyone can be said to be the "patron saint" of Women's Studies, it is Woolf. But in her essay, "Donne After Three Centuries," Woolf proves to be a false goddess to her handmaidens.

> Falling in love meant, to Donne, a thousand things; it meant being tormented and disgusted, disillusioned and enraptured; but it also meant speaking the truth...Donne's poems reveal a lady...brown but she was also fair; she was solitary but also sociable; she was rustic yet also fond of city life; she was sceptical yet devout, emotional but reserved--in short, she was as various and complex as Donne himself...so they pass, common and rare, simple and sophisticated, young and old, noble and plebeian, and each casts a different spell and brings out a different lover, although the man is the same man, and the women, perhaps, are also phases of womanhood rather than separate and distinct women...It is the union of so many different desires that gives Donne's love poetry not only its vitality but also a quality that is seldom found with such strength in the conventional and orthodox lovers--its spirituality. If we do not love with the body, can we love with the mind? If we do not love vicariously, freely, admitting the lure first of this quality and then of that, can we at length choose out the one quality that is essential and adhere to it and so make peace among the warring elements and pass into a state of being which transcends the "Hee and Shee"?[12]

Woolf says that Donne loved women who were *like himself*. He speaks of passing into a state of being which transcends the "Hee and Shee." Could this be an earlier prophetic suggestion of the modern feminists' prescribed creature of the future, the androgyne (which, of course, would eradicate the woman joke forever)? I think not. Woolf is defining essential components of immortal love relationships and of the deepest friendships between men and women.

Margaret Coté, cautioning against extreme feminism lest it destroy feminist goals, quotes from the conclusion of what has become the "Bible" of Women's Studies, A Room of One's Own.

> ...Virginia Woolf states that "it is fatal for anyone who writes to think of their sex...The whole of the mind must lie wide open if we are to get the sense that the writer is communicating his experience with perfect fullness... our relation is to the world of reality and not only to the world of men and women."[13]

Interesting words from a woman who has inspired in her sisters so much invective against the male sex. Undeniably, as the editor of her letters points out, Woolf's feelings for the feminist cause were intense, but they were equally enigmatic. The subject rarely appeared in her letters, diary, or conversation. She had been for twenty years one of the most liberated women in England. The recipient of a good education through tutors, she often ridiculed the institutions of public learning, and "seemed to despise the very positions she wished women to enter." She liked men, and her husband had all the male qualities that she most admired in them. Nicolson pinpoints imbalance in Woolf's reasoning concerning the sexes:

> She found in men qualities which she deplored--aggressiveness, arrogance, self-satisfaction. The corresponding defects in women she scarcely mentioned. Men shoot beasts and birds, but women wear their fur and plumage. Victorian matriarchs could be as ruthless to their children as the patriarchs, and very few of them made use (as Virginia did) of the opportunities for self-education which leisure and financial security afforded them. They were lazy and self-indulgent, and most of them actually welcomed their dependence upon men. It saved them from responsibility.[14]

Anyone reading Woolf's letters and diaries has a difficult time recognizing the militant Marxist-feminist described by Jane Marcus in "Liberty, Sorority, Misogyny."[15] Woolf had many close relationships with the male intellectuals of her day, as well as with her male relatives, even, oddly enough, the two who had allegedly molested her and her sister Vanessa as they were growing up.[16] That Woolf had any genuine interest in the welfare of the working classes is refuted by most of her references to them in her private papers. Nicolson calls her an elitist, and this is not only borne out in unsympathetic remarks about servants and the "masses" but in her bias (running from marked to slight, but it is always there) against anything American, even the arch-Anglophile of them all, Henry James. Marcus' claim that Woolf was a socialist is valid. In this respect she was influenced by her husband, who, however, in his autobiography substantiates that he was as repelled by Marxism/Communism as he was by Fascism. "Virginia was the least political animal that has lived since Aristotle invented the definition.." says Leonard Woolf,[17] and, to back up this claim we can turn to her letters. "But I gather that politics are best avoided; and in any case my views are likely to be inaccurate and perhaps partial--all politics be damned."[18] Marcus' suggestion that Virginia's suffering over the misogyny of her male relatives and the defeat of her pacifist ideals is what led her to suicide toward the end of World War II (Woolf died early, not late in the war) cannot be supported by the writings of any of those who knew her best and who knew the nature of the illness from which she had suffered all her life.

Woolf, whose own life rose so far above the "Hee and Shee," seems as if she might, were she alive today, be the least likely of the feminist prototypes to support the new androgyny. Gilbert's and Gubar's discussion in the Anthology of diaphrams, IUD's, tampons, and sanitary pads,[19] might induce Woolf to repeat her diatribe against an American visitor to Britain..."how vulgar, crude, coarse, American."[20] This particular brand of androgyny had surfaced already in feminist criticism at the 1981 meeting of the English Institute with similar mention of sanitary pads as well as the clitoris. Says Carolyn Heilbron, "Feminism has so far refused to be genteel, recognizing all too well what lies behind such gentility."[21] What seems to lie behind feminist assaults on propriety is the unjustified implication that most male scholars consider impropriety their own prerogative.

Nor would Virginia Woolf, for all of her bi-sexuality, have been likely to agree with Metha and Rothschild that Women's Studies in high school should include, among other things, an understanding of both heterosexuality and lesbianism.[22] Good arguments can be made that the best writers' sexual preferences have little to do with his or her interpretation of the human condition, that great art goes beyond sex to reach universal proportions. Furthermore, students in puberty are having problems enough establishing their own sexual identities in a heterosexual world. For heterosexual this society is likely to remain, regardless of the no doubt multiple feminist writing programs around our country instructing women that child-bearing is part of men's scheme to perpetuate themselves, and that in the new ideal of motherhood (undertaken with a courageous will to loneliness) English papers must replace infants as precious objects.[23]

Feminist objectives are being obscured by feminist tunnel vision--and a one-way tunnel at that. Adrienne Rich is among those feminists accusing male college professors of attempting to seduce their women students.[24] People are human; unethical behavior, lamentably, is also only too human. But let us not forget Virginia Woolf's occasionally unilateral views. These exploitative professors are matched by just as many students, both women and men, attempting to seduce them.

Academic feminism has become political and biased, and I agree with Helen Hazen that "when politics become an integral part of the curriculum and opposing views are scorned or suppressed, the result is not learning but indoctrination."[25] In literature classes this hatred of men, this passion to expose and displace them, often results in the substitution for superior by mediocre works. Students whose major fields may allow them to take no more than one literature course may learn of Charlotte Perkins Gilman or Kate Chopin but may never have an idea of who Hawthorne and Melville were. Or they may, as in one case I know of, be asked to compare misogyny in The Scarlet Letter with misogyny in "Rip Van Winkle." Hence they may never become aware that Hawthorne's Hester and Arthur represent the supreme testimonial in American literature to the fact that men and women must share a common destiny, not a separate one, whether that destiny be guilt or glory.

I have a personal theory that strident 20th-century feminism is a corollary of the male malady of our times--that state to which Hamilton is referring when she describes the 20th-century literary artist as growing away from nature. In more than one sense can the academic woman say accusingly to the academic man (for ordinary sexual relations haven't really changed that much), "We are what you have made us." But the protagonist in the feminist novel who wanders off alone, bravely determined to adapt to her chosen solitary way, is also the product of a sentimental mind, writing about that of which it does not yet know. She has been alone only twenty years. Give her thirty, and she may very well come in from the cold.

NOTES

[1] Edith Hamilton, *The Ever-Present Past* (New York: W. W. Norton, 1964), pp. 127-141.

[2] Hamilton, pp. 159-170.

[3] Susan Moeller Okin, *Women in Western Political Thought* (Princeton, N.J.: Princeton University Press, 1979), pp. 15-96.

[4] Edith Hamilton, *The Greek Way to Western Civilization* (New York: Mentor Books, 1948), pp. 149-151.

[5] Hamilton, *Ever-Present Past*. Last three quotations 136-137

[6] Hamilton, *The Greek Way*, pp. 108-109.

[7] Hamilton, *Ever-Present Past*, p. 138.

[8] J. O. Tate, "Don't Get Your Knickers in a Twist," *National Review*, Nov. 15, 1985, p. 49.

[9] Sandra M. Gilbert and Susan Gubar, *Mad Woman in the Attic* (New Haven: Yale Univ. Press, 1979), p. 245.

[10] Gilbert and Gubar, p. 295.

[11] Tate, p. 50.

[12] Virginia Woolf, *The Common Reader* (London: The Hogarth Press, 1953), pp. 29-31.

[13] Margaret M. Coté, "Now That We Have a Room of Our Own, Are We Throwing Away the Key?" *College English*, 44, No. 6, Oct. 1982, p. 611.

[14] Nigel Nicolson and Joanne Trautmann, eds., *The Letters of Virginia Woolf*, Vol. V: 1932-1935 (New York: Harcourt Brace Jovanovich, 1979), pp. xiv-xvi.

[15] Jane Marcus, "Liberty, Sorority, Misogyny," *The Representation of Women in Fiction*, eds. Carolyn Heilbrun and Margaret Higonnet (Baltimore: Johns Hopkins Univ. Press , 1983), pp.60-91.

[16] Nicolson and Trautman, *Letters*, Vol.I: 1888-1912 (1975), pp. xvi-xvii.

[17] Leonard Woolf, *Downhill All the Way: An Autobiography of the Years 1919 to 1939* (New York: Harcourt, Brace & World, 1967), pp. 18-27.

[18] *Letters*, V, p. 436.

[19] Tate, p. 53.

[20] Letters, III: 1923-1928, p. 488.

[21] Representation of Women in Fiction, p. xii.

[22] Arlene Metha and Mary Aickin Rothchild, "Women's Studies and the High School English Teacher," Engl. Journal, Mar. 1985, p. 26.

[23] Joyce Trebilcot, "A Course on Mothering and the Right to Resist It," Women's Studies Quarterly xi:4 (Winter 1983), pp.32-34.

[24] Adrienne Rich, "Taking Women Students Seriously," The Norton Reader, 6th ed. (New York: W. W. Norton, 1984), p. 193.

[25] Helen Hazen, Endless Rapture: Rape, Romance, and the Female Imagination (New York: Charles Scribner's Sons, 1983), pp. 127-130.

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MALE STUDENTS - WOMEN'S STUDIES ON MAINSTREAMING FEMINIST SCHOLARSHIP

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At the initial meeting of an Afro-American Literature class, I had just presented half of my syllabus, naming Alice Walker, Toni Morrison, Ntozake Shange, and Gloria Naylor when Joe interrupted. Having previously taken English courses devoted exclusively to works by men, he spontaneously equated serious literature with the male paradigms and protested "But these books are all by women!" Taken aback, I wondered why for decades no one had objected to the male monopoly on college reading lists, but I responded instead to his implicit fear of having stumbled into a sexist classroom where men would be unfairly treated. On the contrary, when correctly understood, a feminist perspective is inclusive, not exclusive. "Don't worry," I assured him. "Our syllabus is integrated..." Still, the proportion of feminine authors on our program was only the first surprise. The second lay in my explicit application of a feminist interpretive model to all of our texts, not to eliminate but to supplement a range of possible views. And third, my participant-centered classroom, locating the process of explication with the students themselves, offered an unfamiliar challenge.

Joe's initial scepticism has since been transformed into enthusiastic support. And since other mature men -- fully 60% of my students -- re-enroll for course after course with me, I have clearly registered some success in my efforts to 'mainstream' women's studies, integrating the insights of that multidisciplinary body of scholarship into otherwise traditional literature courses. I emphasize my rapport with male students --

whose level of enthusiasm and engagement in my classroom is that much more surprising, given that they are themselves quite special, namely military men taking their degrees at night with the University of Maryland -- to disarm a certain kind of prejudice which still prevails among administrators unfamiliar with the work of women's studies scholars. As Rutger's University Professor Catherine Stimpson has pointed out, misunderstanding is betrayed by such pejorative comments as "Women's studies is female chauvinism. Aren't they going to study men?" or "Women's studies is absurd. What's next? A Department of Male Studies?" (1) Fortunately, this fear of retribution is unfounded. As Anne Roiphe contends in one of my favorite essays, the "Confessions of a Female Chauvinist Sow," feminism's purpose is to INclude, not EXclude. As Roiphe writes, despite men's segregationist policies, women should not replicate the errors of the past, and she warns specifically against the self-destructive potential of anti-male bias: "Women who want equality must be prepared to give it and to believe in it, and in order to do that, it is not enough to state that you are as good as any man, but also it must be stated that he is as good as you and both will be humans together. If we want men to share in the care of the family in a new way, we must assume them as capable of consistent loving tenderness as we." (2) In fact, underlying women's studies is a positive image of the male, presumed to be as concerned as women with enlarging his view of social interaction and understanding mechanisms of oppression.

The solid accomplishments of feminist scholarship -- the alternatives it offers which are leading to a reconsideration of methods and content in numerous disciplines -- should be briefly mentioned. In literature we can applaud the publication of *The Norton Anthology of Literature by Women,* (3) recovering a wealth of neglected chef-d'oeuvres by female authors - Kate Chopin's *The Awakening* for instance - and thereby supplementing the standard collection consisting almost entirely of works by men. In linguistics and literary criticism, new questions are being posed and gender-distinctions explored. For instance, the claim of sexual/textual neutrality has been challenged by Helene Cixous, Luce Irigaray, Julia Kristeva in France, Nancy K. Miller, Shoshana Felman and other female romanists in America. Psychological experiments concerned with sexist language have also been widely conducted. (4) These studies document the detrimental effects on women's self-image resulting from the use of such faulty generics as "man" for humankind and "he" for persons of both sexes. In anthropology, history and ethics we have ground-breakers as well. The late Professor Michelle Rosaldo and her colleagues in anthropology at Stanford University unmask in one early work such supposedly sex-neutral concepts as power, competitiveness and dominance, thereby showing how these are male specific categories, females in most cultures having been motivated by different but equally effective social values of their own. (5) Similarly, Professor Carol Gilligan of Harvard has challenged Kohlberg's final category for human (in reality male) development -- autonomy based on universal and abstract moral principles -- and has shown that women's psycho-moral development is not lesser or incomplete because grounded in contrasting principles stressing inter-relationship, nurturance and non-violence. (6) History, too, has been re-envisioned in the light of a feminist critique. Suspicion of male categories arose from an awareness of woman's absence; female scholars have therefore begun to include her, revolutionizing historical research in the process. As Professor Gerda Lerner has proposed in *The Majority finds its Past: Placing Women in History*, once we have begun to examine historical development from the point of view of "sexuality, reproduction, the link between child-bearing and child-rearing; role indoctrination; [and] sexual values and myths," we will have not only a means of assessing women's role in history, but also "new questions to all of history." (7) And these are but a very few of those feminist scholars contributing to the broadening of vision in their respective disciplines.

But how is this new knowledge transmitted in the classroom? Although a number of standardized measures exist with which to gauge the effectiveness of women's studies teaching [including the "Attitude Toward Women Scale" (Ruble et al. 1975)], the National Institute of Education questions the ability of most experimental design studies to measure intellectual mastery. The trend in evaluative research has been rather toward assessing attitude change, but this is being superseded by a more "multivariate" approach. (8) On the whole, however, research utilizing student self-reporting and ratings - that is, based on interviews and case studies - has most convincingly documented success in terms of liberalized attitudes and increased sensitivity to the point of view proposed as feminist. My conclusions are based on similar methodology: classroom interaction and the evidence in student essays demonstrate increasing awareness on the part of males of the female perspective on literary and social issues.

In order to illustrate my approach, which is both compensatory (concerned with the female) and remedial (conscious of sexism), I offer the following anecdote as an analogy to literary criticism: a photograph, standing for any artistic arrangement of signs to be interpreted, provokes a dialogue that moves from the traditional, or male-oriented viewpoint, to the female-focused or feminist perspective.

Let me share the following experience with you: In the palace of the late Maharaja of Mysore my husband and I viewed a mammoth wedding photograph taken in 1901. The Peacock Room, with its cathedral ceiling of stained glass cupolas and Moghul arches, had then been the setting for hundreds of guests staring fixedly at the camera, each imperial visage radiating complacency and importance. The wide-angle lens had indeed succeeded in recording this sumptuous banquet of historical detail, the innumerable dignitaries in regional dress flanking the betrothed on their ceremonial dais. In fact, so accurately placed is the camera eye that the newly-weds appear at the vanishing point, the apex of a pyramid both visual and symbolic: a number of the festive pashas may well be political equals to the host, but the photograph transforms them into props of an alien power, their artistic arrangement, as tributaries to the throne, reinforcing our impression of marriage as an alliance whose purpose is to cement the hegemony of a mighty sovereign.

By the time we arrived at this conclusion concerning the visual document's purpose, our tour group had long since left us to admire the hand-carved ivory doors in the vestibule. But we remained transfixed by the Maharaja's marriage, held in thrall as it were to those dozens of eyes, some staring out from under turbans, others escaping from the folds of beards, still others glinting from the refracted light of sabers. Only then could I pinpoint the source of my malaise. "They are all men!" I exclaimed to my husband, whose uncomprehending response was, "Of course," implying that male hegemony in the Indian state of Karnataka at the dawn of this century is simply a fact to be taken for granted. But I wouldn't. "Not ' of course'," I contradicted. "Don't you see? There are hundreds of men, not a single woman, and only one little girl... Look how small she is! And I'm sure she had no choice -- she must be no more than ten years old -- but she will be forced, nevertheless, no matter how much she loaths the body of her owner, to submit to ..." Defying the corporate gaze of the assembled potentates, ignoring the aesthetic compulsion of the artist's symbolic form, I focused on the little girl-child, the only creature in that pompous convocation whose countenance is veiled, meek, shrinking. We are not meant to see her, nor to contemplate what the transfer of political power through the transfer of power over her girl-child's body means to her. We are not intended to look at this picture and wonder how those men can fail to have felt ashamed.

As a feminist in an 'integrated' classroom, I have been faced with a recurrent challenge, posing itself anew with every group I teach: how best to sensitize students to a woman's perspective, which means encouraging them to see the child-bride in an assemblage of monarchs not only as a symbol but also as a person, a female human being suffering her definition as inferior, controlled by men but sharing with her captors a common humanity equally impelled toward independence and self-actualization. Anthropologists like Levi-Strauss have written with sang-froid about the "exchange of women" as the basis for (male) civilization, assuming a tone very much like my husband's in the Maharaja's palace as he patiently explained why our first interpretation, emphasizing political aggrandizement, is more accurate than the feminist view. Clearly, the wedding portrait was commissioned to record a princely pact involving territorial claims affecting the destiny of thousands: that a prepubescent girl may be sexually molested as a corollary is a private matter. The fate of a single female is immaterial, he argues. The geopolitical ramifications are paramount. "Yes," I concede, "the alliances of rulers are clearly important, but why not enlarge our vision of the forces at work here? Why this resistence to focusing specifically on the woman's role?" For in order to understand most broadly the events frozen by the camera, we should not fail to regard the child-bride as both an individual and a representative of the control one sex exercises over the other. The non-feminist instructor might well choose to ignore this sub-message, dealing exclusively with the superficial political scenario. But once having cultivated an understanding of the underside of phallocratic culture, I feel compelled to share this insight with my students.

I have thus taken the Maharaja's photo to stand for the artefacts of masculine culture which I discuss with students in my literature courses, and the conversation it inspired to suggest the dialectic of a feminist approach. Mainstreaming then has the following dimensions: it means not only supplementing the received curriculum with female writers, but just as importantly, supplementing standard criticism of form and theme in works by men with questions inspired by feminism. These are based on twin assumptions : that, in terms of prestige, financial rewards, and control over our lives, society clearly privileges the male. Men and women therefore stand in a different relationship to culture which in turn results in the need to distinguish between a specifically female and a dominant male point of view. (This does not annul the fact that women may and often do adopt the masculine mode of seeing.) Or, as Florence Howe has written: "Coming to a feminist consciousness meant, for me, coming to the painful understanding that the world was divided into male and female and these categories, like those of race, were not to be changed or exchanged. Unlike students who might become teachers, or children who often become parents, males and females do not in a sexist society change places any more than blacks or whites." (9) Women's studies' goal is to see the sexist culture superseded by an androgynous, egalitarian one. But for now, females and males, distinctly situated under patriarchy, are affected in gender-specific ways by cultural events and stimuli which, in the service of both accuracy and justice, scholarship would do better to explore than to ignore. To illustrate, the import of Emerson's or Thoreau's words varies with the sex of the reader, for clearly, issues of democracy and 'civil disobedience' pose themselves quite differently to individuals, contingent upon whether they are disenfranchised (as were all American women during most of the nineteenth century) or not. But because academia has consistently under-rated the contribution of a female perspective, the feminist instructor's task lies in making accessible, to both male and female students, that buried or discredited mode of seeing which encompasses women's reality.

Emphasis on this plurality of vision may seem divisive as a classroom strategy: one may expect polarization and hard feelings. But it remains possible to critique a system while maintaining respect for individuals, to censure a group while avoiding prejudice against its members. As the former sceptic, Joe, remarked in his assessment of my feminist-inspired teaching: "I was also, again and again, touched by your sensitivity and tact and how you never underestimated even the slightest comment." These qualities governing student-teacher interaction are of course not limited to feminists, but feminism makes them a cornerstone of pedagogy to which men of good will have, in my experience, reacted without rancor. On the contrary, my male students have proven themselves again and again not unwilling to examine the impact on our culture of a patriarchal past, and many even share the hope of a more egalitarian future.

NOTES

1) Catherine Stimpson, "The New Feminism and Women's Studies," *Women on Campus the Unfinished Liberation* (New York Change Publishers, 1975), p. 82.

2) Anne Roiphe, "Confessions of a Female Chauvinist Sow," in *Patterns of Exposition 9.* Ed. Randall E. Decker (Boston Little, Brown and Co., 1984), p. 88.

3) Sandra M. Gilbert, Susan Gubar, Eds. *The Norton Anthology of Literature by Women. The Tradition in English.* (New York W.W. Norton and Co., 1985).

4) see Casey Miller, Kate Swift, *The Handbook of Nonsexist Writing* (New York: Lippincott & Crowell, 1980).

5) Michelle Rosaldo, Ed. *Women, Culture and Society* (Palo Alto Stanford University Press, 1974).

6) Carol Gilligan, *In a Different Voice. Psychological Theory and Women's Development.* (Cambridge Harvard University Press, 1982).

7) Gerda Lerner, *The Majority finds its Past: Placing Women in History* (New York: Oxford University Press, 1979).

8) National Institute of Education, "The Effectiveness of Women's Studies Teaching," in *Background Papers for the Participants, U.G.C. Winter Institute for Orientation and Training of Teachers in Women Studies*. Ed. Research Unit on Women's Studies (Bombay S.N.D.T. Women's University, 1983), p. 2.

9) Florence Howe, "Feminist Scholarship - The Extent of the Revolution," paper delilivered at the Wingspread Conference Center, Racine, Wisconsin, Oct. 22-24, 1981, p. 21.

GATEKEEPERS FOR ACADEMIC CRIMINOLOGY
AN EXPLORATORY STUDY OF THE STATUS OF WOMEN

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This paper will explore the status of women as academic criminologists. While data regarding academic rank, salary, tenure, and publications are available for other social sciences, this type of analysis rarely has been done in the academic criminology/criminal justice discipline. This paper will present a literature review regarding the nature and extent of the participation of women in academia and explore the limited data available regarding women's participation in academic criminology.

Literature Review of Women in Academia

Several research studies provide evidence that women have achieved low status in academia. For example, data from a 1972 study of the University of California, Berkeley, indicate that women composed 41 percent of entering freshmen, 37 percent of graduating seniors, 31 percent of applicants for admission to graduate school, 28 percent of graduate admissions, 24 percent of doctoral students, 21 percent of advanced doctoral students, 12 percent of Ph.D.s, 38 percent of instructors, 9 percent of assistant professors, 6 percent of associate professors, and 3 percent of full professors (Hochschild, 1975:48). Although there is some evidence that more women have entered academia in the last decade, women still have higher drop-out rates as students and most women remain in the lower academic ranks. One of the major reasons found for the large proportion of women graduate students dropping out is marital responsibility. Hochschild (1975: 69) reported that "among graduate students, the proportion who consider dropping out increases for women with each new born child, but remains the same for men."

Research studies have found that women who remain in academia receive lower salary and rank, are less likely to be tenured and are often located in the less prestigious setting (e.g., Cole, 1979; Hochschild, 1975; and Rosenfeld, 1981).

In a study of career mobility among academic psychologists, Rosenfeld (1981: 343-344) found that women move faster than men to academic nontenure track positions without fringe benefits, such as research associate, lecturer, postdoctoral fellow, or administrator. For women these marginal nontenure track positions are important components of their careers.

Dual Careers. One explanation for this finding is the two-career family, which is as great a potential constraint on men as women. However, few men with Ph.D.s are married to someone also actively engaged in a profession (Rosenfeld, 1981: 348). When the needs of two careers do conflict, decisions are usually made to further the man's advancement at the expense of the woman's career. Sometimes this happens because it is the male who, because of greater age and/or prestige, objectively has better positions open to him.

However, in a cross-cultural study of married and never married women in the labor force of industrial nations, Roos (1983) did not find support for the dual career theory which predicts that because of their lesser home responsibilities, never married women, like men, should be better able to capitalize on their social origins than married women. Data in the Roos (1983: 862) study suggest that never married women are more like men in their labor force behavior, in the sense that they are more likely than married women to participate in the labor force and to work full-time when they are employed. However, never married women are concentrated in very different jobs from those in which men are employed, working in the female professions rather than in higher-paying male employment. The problem with making comparisons between married and single women is that many single women are really "premarried" women; that is, their occupational preferences may be affected by an anticipated assumption of the traditional responsibilities of marriage (Roos, 1983: 855).

The general inability of women (married or never married) to attain the higher-paying prestigious jobs also may be explained by Hochschild's suggestion that a married man with a full-time housewife and mother is most apt to survive in the career system. To the extent that his family does not positively help him in his work or makes demands on his time and psychic energy that compete with those devoted to his job, they lower his chances of survival. This is true insofar as he and most professional women are competing with other men whose wives either aid them or do not interfere with their work. As stated by Hochschild (1975: 67):

> If we inspect the social context of male productivity, we often find nameless women and a few younger men feeding the "productive one" references, computer outputs, library books, and cooked dinners. Women, single or married, are in competition not simply with men, but with heads of small branch industries.

Other things being equal, the university rewards the married family-free man.

Work is shaped into a career and that career comprises a series of positions and accomplishments, each of which is tightly and competitively measured against other careers, so that even minor differences in achievement count (Hochschild, 1975: 60). To the extent that women are likely to have careers that do not conform to the norm in academia, they might especially suffer from the number of previous job shifts they have made and in their rate of mobility from a given rank.

The Age Factor. Women might have difficulty advancing not only because they are women and therefore of "inherently" less prestige, but also because they enter positions at a later-than-normative age (Rosenfeld, 1981: 349). Age discrimination is not some separate extra unfairness thoughtlessly tacked on to universities; it follows inevitably from the bottommost assumptions about university careers (Hochschild, 1975: 61). In the university, a reputation is measured against time; that is, against the year one is born. Time is objectified in the academic vita, which grows longer with each article and book——not with each vegetable garden or each child. What is won for the garden is lost for the vita (Hochschild, 1975: 62). Roos (1983: 862) suggests that age returns little in the way of occupational wage benefits to women regardless of their marital status. Thus even never married women with their more consistent labor force attachment fail to gain in occupational wages from seniority (as indexed by age).

Gatekeepers. Since building an academic vita and reputation are so crucial to a successful academic career, several authors have examined the criteria and standards applied in the evaluation and acceptance of scholarly work. Cook and Fonow (1984) have noted that gatekeepers control access to material rewards: jobs and money. Hiring and promotion decisions are made by those in power while research funding is dispensed through private and public channels which are safeguarded by "already proven" male evaluators. Men are given the privilege of choosing the topics and issues that will be considered of fundamental concern to society. Gatekeepers are in a position to perpetuate their own schemata by exercising sponsorship and patronage towards those who classify the world in ways similar to their own (Spender, 1981: 191). This supports Kanter's (1977) position that gatekeepers prefer people with similar social characteristics and ideas to their own.

Women's knowledge has been systematically stigmatized and marginalized. Though male social scientists have not been criticized for studying men in social life, even today male gatekeepers complain about the narrowness of women researchers specializing in studies of women (Epstein, 1981: 135). There are no alternative standards that allow for the values and priorities of those who are not white, or male. It is not just that men's values are put forward but it is also that women's are discarded (Spender, 1983: 4). When academic scholars establish set standards and justification for standards within a male frame of reference, this serves to reinforce male authority in the discipline and to perpetuate male dominance. Thus, in almost every situation where men and women both participate, men are given greater credibility and men's contributions are regarded as having greater value.

Publication of journal articles, readers, and monographs is one of the most important resources controlled by academic gatekeepers because it brings legitimation to the researcher and her ideas. Publication further establishes the importance of topics and issues in the discipline as well as how they should be defined and investigated, which influences generations of future scholars (Cook and Fonow, 1984: 14).

Male decisions dominate the printed word in four stages in the selection, production, and distribution (Spender, 1983: 17):

1. Editors make initial decisions about significant topics and select materials they deem most important.
2. Experts referee manuscripts and can accept, reject, or recommend changes. While the selection of such reviewers are techincally open, who is selected as referee depends largely upon the editor's 'contacts' and 'friends' who usually agree on fundamental issues (Spender, 1981: 195).
3. Editors guide, influence or coerce writers into modifying or expanding their material.
4. Some member of the publishing group decides on the number of copies and the marketing of the product.

Editors in academic presses often base their decisions about manuscripts on the product's commercial marketability rather than it's substantive value. Thus, the decision-makers involved at various stages in the processes of publishing can shape the final product to suit their own needs and interests. Even after the final product is bound and appears in print, the status they will eventually acquire can be influenced through gatekeeping controls. Male gatekeepers continue to make decisions about marketing, reviews, and rewards for literary or scholarly excellence. In this area, men generally receive both the greater financial rewards and the public recognition as writers that women are frequently denied (Spender, 1983: 75). Spender further suggests that there is a preferential treatment of material that reflects a male view of the world and trivalization of women's work (Spender, 1983: 78-86). Spender concludes her discussion of gatekeepers by stating that eighty percent of the printed material produced in our society has shown a consistently masculine bias (1983: 124).

The last section of this paper will explore the validity of the above discussion of male gatekeepers for women as academic criminologists.

An Exploratory Analysis of Women as Academic Criminologists

In order to explore the role of the gatekeepers in criminology, this section of the paper will examine the professional participation of women criminologists in the Academy of Criminal Justice Sciences (ACJS) and as authors of articles published in four of the major criminology/criminal justice refereed journals. Although the data are very limited and are based on only preliminary research from three different sources, they do provide some indication of the status of women in criminology. The data also contain implicit suggestions regarding the gatekeeper issue.

ACJS Survey. The impetus for this project was an invitation to serve as the chair of the ACJS Affirmative Action Subcommittee on the Status of Women in Criminology in 1982. In the spring of 1983, the subcommittee constructed a structured, open-ended questionnaire to obtain specific information regarding the participation of women and minorities in the ACJS programs between 1978-83 as presenters, discussants, and chairs of sessions as well as their involvement on ACJS committees. and as officers of the association during the same period. The final section of the questionnaire requested information regarding the participation of members in the Journal of Criminal Justice (which was affiliated with AC JS during 1978-83) as authors, referees, or as members of the editorial board. To obtain data regarding the gatekeeper issue discussed earlier in this paper, respondents were asked to include rejections as well as activities in which they actually participated in ACJS or the Journal.

The original plan was to send the questionnaire and a cover letter, with a self-addressed stamped envelope for returning the completed questionnaire, to all women members of ACJS and to a 25 percent random sample of all men who were members of ACJS for the 1982-83 academic year. However, adequate funds were not available. It was necessary to send the questionnaires,along with other routine mailings, from the ACJS central office to the entire membership, which was composed of 16 percent women and 84 percent men. There was also no money available to send out follow-up mailings, when returns were low.

Women were only slightly more responsive to the questionnaire survey than men with 19 percent of the questionnaires being returned by women and 81 percent returned by men. Although the numbers were too small for more than a tentative analysis, the responses provided no evidence that women were participating less (in proportion to their membership in ACJS) or rejected more as presenters in ACJS sessions or as authors for the Journal of Criminal Justice than male members.

ACJS Program. Since the membership response to the questionnaire survey was low, the ACJS programs were analyzed to estimate the actual participation of women in 1980-84 as session chairs, presenters, and discussants. Programs were also culled to determine the number of women on committees or serving as officers for the association. Gender was based on the first names of program participants, which has inherent difficulties and potential for inaccuracies. This method also provides no information regarding the number of people rejected as participants in each of these categories.

During the five year period (1980-1984), 17 percent of the persons who served as session chairs were women with a low of 15 percent in 1982 and a high of 24 percent in 1980. For the same years, only 11 percent of the persons presenting single authored papers were women. Women made up 14 percent of the presenters in 1981 but by 1984 the participation of women in this category dropped to 8 percent. Finally 14 percent of the panel discussants for the five years included in this study were women with a low of 9 percent in 1981 and a high of 17 percent in 1984. Although participation by women varied from year to year and in different categories of the program, the proportion of women on the program was approximately the same as the proportion of women in the total ACJS membership. While the number of persons serving on committees or as officers is very small, the percentage of women elected to these positions has increased somewhat from 1980 to 1984.

Journal Articles. The third source of data comes from a computation of the frequency of single-authored publications by women for four major refereed criminology journals for the ten year period, 1973-82 (Hart and Marty, 1983: 7-9). Since this analysis is also based on the first names of authors published in these journals and the data do not provide information on articles rejected, these data have the same inherent flaws discussed above for the analysis of the ACJS program.

However, the data in this exploratory study indicate that only 7 percent of the single-authored publications in *Crime and Delinquency* and in *Journal of Police Science and Administration* were authored by women. While 9 percent of such articles in the *Journal of Criminal Justice* and 15 percent of articles published in *Criminology* were written by women (Hart and Marty, 1983: 7-9). Furthermore, Hart and Marty (1983: 14) state that there was no significant increase in the number of women contributing articles in these journals on a yearly basis for the ten year span. Although these data do not provide information about papers rejected for publication, the percentage of women publishing in these refereed journals over this ten year period is lower than women's participation on ACJS programs. This would seem to lend some support to the gatekeeping hypothesis discussed in the previous section of this paper, especially regarding the printed word.

Summary and Conclusions

A number of issues have been considered in the literature concerning the low professional participation of academic women. This paper has been primarily concerned with the degree to which male gatekeepers have been responsible for this low participation of academic women. Criminology has traditionally been dominated by men both as academicians and as practitioners. Thus, the question of professional access for women is of great importance for the discipline of criminology.

However, this preliminary analysis of three sources of data regarding professional criminologists does not provide a great deal of insight into the gatekeeping phenomenon. It gives no explicit data on the rejection rate of women's papers for presentation at ACJS or for the manuscripts submitted by women for publication in four major refereed criminology journals.

This preliminary analysis of women's participation in criminology does point to the need for a systematic and scholarly research on the topic of gatekeeping among criminologists in academia. Future research must be carefully designed so that respondents will be challenged to cooperate and provide the data needed for a meaningful analysis of the information obtained. The research design should include a carefully designed questionnaire, a broadening of the sample to include the American Society of Criminology as well as the Academy of Criminal Justice Sciences. Most importantly, strategies must be developed for acquiring substantial funding for such a project.

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Improving University Teaching

III

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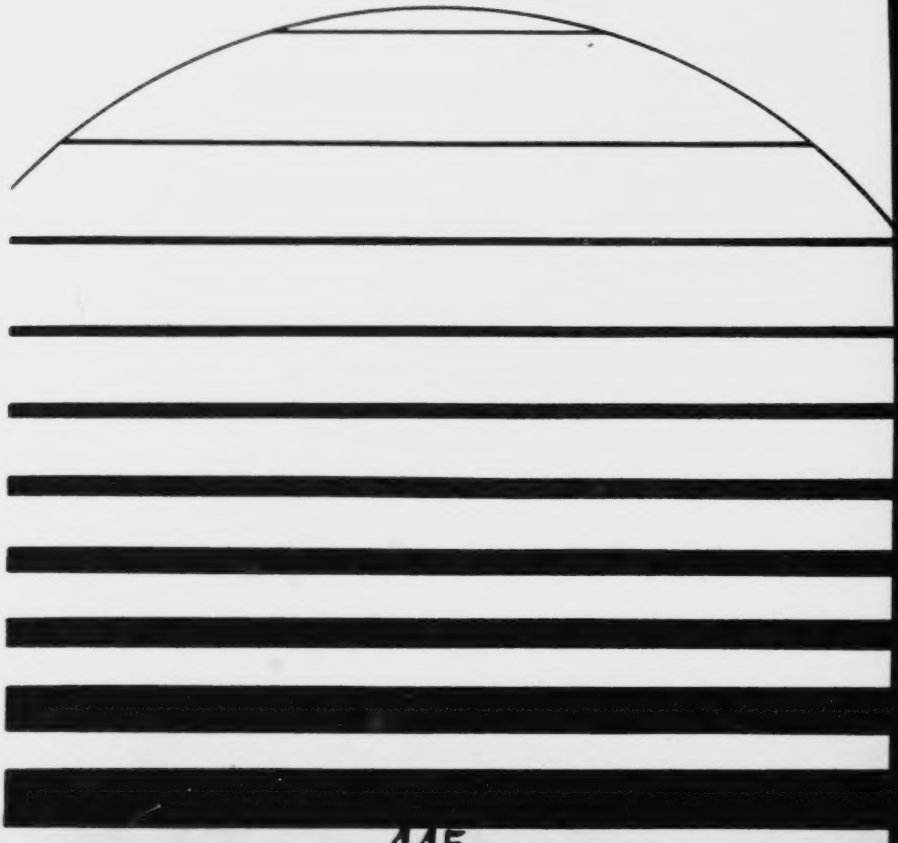

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ISSUES IN FACULTY DEVELOPMENT

THURSDAY, 17 JULY

1600 - 1730

FACULTY DEVELOPMENT ISSUES AND CONCERNS
IN PENNSYLVANIA
PUBLIC HIGHER EDUCATION

Larry R. Cobb*
and
George T. Force
Slippery Rock University

Introduction. Faculty development today is a primary way to enhance the quality of educational performance. The quality of excellence in the university emerges from a community of learners involved in a web of good teaching, dynamic research, community service, and effective communication within and outside the institution. Fundamentally, the mark of educational excellence is the advancement of knowledge. In the contemporary university, when knowledge is coupled with superior instructional and professional activities, the result can be performance at optimal levels of human potential. In academe today, the professoriate is charged with the creation and evaluation of knowledge and the inculcation of appropriate standards and skills in themselves and others.

The Association of Pennsylvania State College and University Faculties (APSCUF), as the collective bargaining organization for the fourteen universities in the State System of Higher Education (SSHE), recently moved on two fronts to enhance educational excellence. On the one side, APSCUF sought a contractual basis for funding an ongoing program of faculty development activities.

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*In addition to the principal author, other members of the Committee on Quality in Higher Education are William Brent, Chemistry Department, Clarion University; Madelyn Valunas, Library, Shippensburg University; and Roger Whitcomb, Political Science Department, Kutztown University.

Concurrently on the other, acting through its Legislative Assembly, it formed The Committee on Quality in Higher Education to conduct research which could provide a basis for an enlightened policy of faculty development.

This study is drawn from a larger, systematic examination of faculty development which began during the spring of 1985. That study involved the administration of a survey to approximately 4000 faculty employed in the 14 universities of SSHE. Of those surveyed, 1063 questionnaires were completed and returned; this constituted a return rate of over 25%.

The survey instrument contained 81 close-ended items which requested professional background information and addressed four areas of concern: teaching, scholarly growth, contributions to university and community, and finally, activities which support academic performance. For the items in the final category, the faculty assigned a priority from high to low. For the items dealing with teaching, scholarly growth, and contributions to the university and the community, respondents assigned a value ranging from great value to no value. Years of teaching experience and academic school were among the supplied professional background information items.

The immediate study focuses on three selected classroom issues and their relationship to two characteristics of faculty members, namely, years of teaching experience, and academic school. The selected issues are active vs. passive learning, computer-assisted instruction, and cross-cultural perspectives. These items were chosen because they are salient issues at the critical edge of active teaching, professional development, and institutional change. They are also substantive instructional areas in which effective change is considered to be feasible. Development in those areas is likely to involve a different orientation to the student-teacher relationship, flexible skills for transmitting knowledge, fresh value perspectives on the student as learner, and a transformation of previous understanding of learning. Our interpretive theme is that faculty members do subscribe to the public language that surrounds academe, but they are reticent about altering specific behaviors to conform to the stated values.

Findings: Active vs. passive learning. If the student is to learn and retain essential subject matter, so current reasoning goes, then engaging the student actively and personally in the learning process is thought to be the most effective mode of instruction. Instruction that required students to take notes obediently in large lecture halls was an accepted regimen for students engaged in passive learning. While occasional questions generated some professor-student interaction, the one-way transmission of knowledge was the standard operating procedure. Passive learning meant taking good notes, memorizing the key concepts, and reading the textbook. Students who did these tasks better than others performed better on multiple-choice and essay examinations, and were duly rewarded for their performance.

Today, neither the mode of instruction which encourages passive learning, nor content so taught, is deemed to serve the best interests of students or the future interests of society. Regardless of whether or not today's students are less cerebral or intellectual (seemingly reflected in lower standardized test scores), students must be taught. Active learning encourages them to learn with optimal results for the present and, perhaps, the future. A vital question is whether faculty are ready to participate in active learning processes.

Information presented in Table 1 indicates that faculty perceive active learning to be crucial. The data consistently show that 70% or more of the faculty, without regard to the number of years of teaching experience, place great value on encouraging active learning. Indeed, 100% of the faculty with two or less years of teaching placed great or some value on encouraging active learning while 94% of those with over 20 years experience do the same. It is important to point out, however, that as the number of years of teaching increases, there a is diminution of value placed on encouraging active learning.

Table 1. Relationship Between Years of Teaching Experience and the Value Placed on Encouraging Active Learning (in percents).*

ENCOURAGING ACTIVE LEARNING	YEARS OF TEACHING 0-2	3-5	6-10	11-20	Over 20
Great Value	85%	76%	73%	73%	71%
Some Value	15	22	21	22	23
Little Value	0	2	2	3	4
No Value	0	0	**	**	**
Missing	0	0	4	2	**
	100% (n=26)	100% (n=49)	100% (n=122)	100% (n=557)	98% (n=300)

*Percentages may not equal 100 due to rounding.
**Less than 1%. Chi Square = 97.90; 20 df.

When we examine the academic school of the faculty member (a reflection of academic discipline), does the same hold true? The general answer is yes as indicated in the information in Table 2.

Again, and as can be seen, 70% or more of the faculty across the schools place great value on encouraging active learning. A comparison of the schools shows, however, that 80% of the faculty in Education place great value on encouraging active learning while only 69% and 68% of the faculty in Social Science, and in Mathematics and Science, respectively, do the same.

TABLE 2. Relationship Between Academic School and the Value Placed on Encouraging Active Learning (in percents).*

ENCOURAGING ACTIVE LEARNING	ACADEMIC SCHOOL Humanities	Social Science	Math & Science	Education	Business
Great Value	74%	69%	68%	80%	73%
Some Value	19	27	28	18	24
Little Value	5	4	4	**	0
No Value	**	**	o	**	3
Missing	2	2	0	1	0
	100% (n=243)	100% (n=150)	100% (n=201)	100% (n=199)	98% (n=63)

*Percentages may not equal 100 due to rounding.
**Less than 1%. Chi Square = 174.20; 36 df.

Professional educators may be more comfortable with the face-to-face learning-teaching processes involved in the active mode of teaching than are their counterparts in the other schools. They may be less concerned about the respect imputed to the European-style, lecture-mode of teaching in one key which often typifies Social Science faculty and teachers of Science. Education faculty are often in the forefront of instructional innovation, both in and out of the classroom, which may help explain their strong support for this style of learning. The issue is whether the passive modes of instruction can generate the desire for active learning and then prepare faculty to teach in a new key.

Two specific areas in which active rather than passive instruction seem to be mandatory are using the computer as a teaching tool and transmitting an understanding of various cross-cultural perspectives on the subject matter. The former asks that the professor personally interact with students in learning how the computer can enhance the meaning of the course content. The latter, a cross-cultural perspective, asks the professor to expand student appreciation and understanding of the multidimensional world in which they will function. But, are professors willing to make the needed transformations of *how* they teach and *what* they teach?

Findings: Computer-aided instruction. Computers are increasingly an adjunct of all institutions of society, from the family to the schools, from religious centers to all levels of government from the local entrepreneur to international banking. Computers are playing increasingly major roles in the lives and well-being of both their users and non-users alike. The expectation is, therefore, that professors will bring appropriate computer technology into their classrooms. The information in Table 3, however, shows that many faculty are somewhat reluctant to do so.

Across the categories of number of years of experience, less than one-third place great value on computer use in the classroom. Of those with the fewest years of instructional experience, 31% place great value on using the computer in teaching. In striking contrast, 18% of those with over 20 years of teaching experience reported the same. Indeed, 23% and 40% of those faculty, respectively, report little or no value to computer assisted instruction. Our conclusion from this is that to incorporate in the classroom what is for many still a strange

TABLE 3. Relationship Between Years of Teaching and the Value Placed on Using Computers in Teaching (in percents).*

USING COMPUTERS IN TEACHING	YEARS OF TEACHING 0-2	3-5	6-10	11-20	Over 20
Great Value	31%	31%	21%	22%	18%
Some Value	46	55	40	47	39
Little Value	19	10	24	17	26
No Value	4	0	8	8	14
Missing	0	4	7	5	3
	100% (n=26)	100% (n=49)	100% (n=122)	99% (n=557)	100% (n=300)

*Percentages may not equal 100 due to rounding.
Chi Square = 56.52; 20 df.

technology is indeed a difficult undertaking, particularly for those professors socialized in an earlier era.

As Table 4 below shows, reticence in using the computer in teaching is evident among all faculty without regard to the school in which they teach. Only when the faculty placed either great or some value on the use of computers for instruction do we find support close to 50% or more. Of the faculty in the Humanities, 13% placed great value on using computers in teaching. Strikingly, 56% of them reported that instructional use of computers was of little or no value. More Business faculty (33%) placed great value on the use of computers in teaching than any other faculty. The most sympathetic attitude toward the use of computers in teaching is among the faculty whose traditional metaphysical systems are congruent with a logical and mechanistic metaphor. Thus, 78% of the Mathematics and Science professors reported that using computers in teaching was of great or some value to them.

TABLE 4. Relationship Between Academic School and the Value Placed on Using Computers in Teaching (in percents).*

	ACADEMIC SCHOOL				
USING COMPUTERS IN TEACHING	Humanities	Social Science	Math & Science	Education	Business
Great Value	13%	18%	28%	23%	33%
Some Value	36	43	50	51	38
Little Value	26	23	14	21	16
No Value	20	11	5	5	8
MISSING	5	5	3	1	5
	100% (n=243)	100% (n=150)	100% (n=201)	101% (n=199)	100% (n=63)

*Percentages may not equal 100 due to rounding.
Chi Square = 181.39; 36 df.

Findings: Cross-cultural learning. There is a magnifying need to understand, appreciate, and be effective in many cultural settings. How willing are professors to include a perspective on this multidimensional world in their classrooms? Table 5 below reveals that faculty do place considerable value on cross-cultural understanding.

Little or no teaching experience associates with the least appreciation of cross-cultural understanding. Table 5 shows that 61% of the faculty with the fewest years teaching experience place some or great value on cross-cultural understanding. By comparison, the greatest level of appreciation (76%) is found among professors with 3-5 years of experience. At least 70% of the faculty who have taught for six or more years subscribe to cross-cultural understanding as a dimension of their instruction.

Of the newest faculty, 19% place great value on cross-cultural understanding in their teaching. This level of appreciation may rest in the recent employment trend to hire many temporary faculty without advanced graduate degrees and credentials. The newest faculty may represent a separate, more- arochial subculture, attuned to immediate employment considerations more than selected classroom concerns.

TABLE 5. Relationship Between Years of Teaching and the Value Placed on Cross-Cultural Understanding (in percents).*

CROSS CULTURAL UNDERSTANDING	YEARS OF TEACHING 0-2	3-5	6-10	11-20	Over 20
Great Value	19%	31%	31%	28%	30%
Some Value	42	45	40	42	41
Little Value	35	18	17	21	17
No Value	0	6	8	6	9
Missing	4	0	3	3	3
	100% (n=26)	100% (n=49)	99% (n=122)	100% (n=557)	100% (n=300)

*Percentages may not equal 100 due to rounding.
Chi Square = 62.51; 20 df.

Wide differences are revealed when the academic homes of faculty are compared. This information is presented in Table 6 below. As we might expect, sizeable proportions of the faculty in the schools of Humanities (81%), Social Science (74%), and Education (66%) place some or great value on cross-cultural perspectives. In comparison, 51% of the faculty in Mathematics and Science and 48% of the faculty in Business place little or no value on integrating cross-cultural perspectives in their teaching. It may be that it is in these schools that many of the recent, often temporary, hires are occurring

TABLE 6. Relationship Between Academic School and the Value Placed on Cross-Cultural Understanding (in percents).*

CROSS CULTURAL UNDERSTANDING	ACADEMIC SCHOOL Humanities	Social Science	Math & Science	Education	Business
Great Value	41%	38%	7%	34%	13%
Some Value	41	36	40	32	43
Little Value	11	18	35	18	25
No Value	4	6	16	9	13
Missing	3	2	2	7	6
	100% (n=243)	100% (n=150)	100% (n=201)	100% (n=199)	100% (n=63)

Chi Square = 261.55; 36 df.

Discussion. We have shown that faculty articulate a willingness to become actively engaged in the teaching process and to encourage active learning. We have also shown that additional faculty efforts are required if the advantages of the computer are to be realized in the classroom. With respect to cross-cultural perspectives, much positive support for them already exists. In both cases, once the professor leaves the lectern and enters the social space of the student, learning is more personal for all. The emphasis shifts from facts and knowledge to personal integration and meaning. Active teaching activates the learning potentials of students and the faculty as well.

PROMOTING INTERNAL COLLABORATION: A TEACHING FELLOWS PROGRAM FOR JUNIOR FACULTY

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Introduction

Ebel and McKeachie (1985) recently identified institutional faculty development activities as important mechanisms for bringing faculty of different ages, ranks, and disciplines together to overcome the tendency of faculty to become isolated within their disciplines or age cohort. Increasing specialization within academic disciplines, has tended to promote faculty competition and departmental rivalries (Rudolph, 1984) and therefore has created forces which reduce opportunities for collaboration among faculty. In this highly specialized environment interactions tend to occur within disciplines rather than across disciplines. These interactions focus on advances in areas of specialization and provide few opportunities for discussion of issues relating to undergraduate instruction.

In 1974 the Lilly Endowment Inc. of Indianapolis initiated a post-doctoral teaching awards program to encourage research universities to devise approaches for introducing junior faculty to the profession of teaching. This program was begun in response to the recognition that for the most part college and university faculty are prepared by their graduate training only for the research dimension of their professions (Beeman, 1981). Each year the Endowment provides funds to support six institutionally designed programs.

In 1984 The University of Georgia (UGA) implemented a teaching fellows program under the sponsorship of the Lilly Endowment Post-Doctoral Teaching Awards Program. From the beginning this program at UGA has emphasized group activities to bring together junior and senior faculty from across the campus to address issues relating to teaching. Over the last two years this teaching fellows program has become a major vehicle for encouraging intrainstitutional communication and collaboration among faculty from diverse disciplines at The University of Georgia.

The University of Georgia is the oldest chartered state supported institution in the United States. As the state's flagship institution it is recognized as one of the major research institutions in the country (Carnegie, 1976). With 1850 faculty, the institution enrolls approximately 26,000 full-time students and offers a full range of degree programs in most academic and professional areas. In 1979 a decision was made to establish an Office of Instructional Development and in 1981 its first permanent director came to the campus. During the past five years a wide range of instructional and faculty development activities have been created in order to further promote a climate wherein faculty concerns relative to effective teaching are nurtured.

The Teaching Fellows Program

For each of the past two years eight junior faculty have been selected to take part in a year long teaching fellows program at The University of Georgia. This program is sponsored by the Office of the Vice President for Academic Affairs and the Lilly Endowment, Inc. of Indianapolis, Indiana and administered by the University's Office of Instructional Development. Each teaching fellow is an assistant professor in a tenure-track position with one to three years of teaching experience. The fellows are selected by a faculty committee from candidates nominated by the deans of the University's thirteen colleges and schools. Criteria for selection include the extent of the candidate's involvement in undergraduate instruction, the commitment of the candidate's department to support the candidate during the fellowship, and the potential of the candidate for achieving a tenured position at the University and becoming a leader in his or her department.

The fellows for 1984-85 represented the following areas: chemistry, education, forestry, genetics, home economics, pharmacy, psychology, and sociology. The 1985-86 fellows are from business administration, chemistry, English, environmental design, food science, pharmacy, political science, and psychology. Each fellow received twenty percent release time for participation in this program and a grant of $3500 to $4000 for use in a project designed to improve instruction in their department. In addition, each fellow was asked to identify a senior faculty member who would serve as his or her mentor during the program.

The goals of the teaching fellows program have been defined as follows.

1. Provide young faculty with an opportunity to further develop basic skills associated with effective teaching.
2. Provide new faculty with information concerning instructional resources and services available at the University.
3. Demonstrate to new faculty that their institution places a high value on good teaching.
4. Offer opportunities for dialog and sharing of ideas with colleagues who face similar problems.

5. Develop collaborative relationships between new faculty and master teachers.

6. Development skills and create an environment which will help faculty become the best teaching scholar's possible.

When possible, these goals are pursued through activities involving the entire fellows group as well as other members of the University community. These activities include two day retreats at the beginning and end of the academic year, round table discussions of important issues relating to teaching, dialogue with master teachers, visits with senior administrators, and presentations by senior faculty, staff and visiting experts. Each fellow selects a senior faculty member to serve as a mentor and these mentors are provided opportunities to share their expertise and experience with the entire fellows group. In addition, activities are planned which provide opportunities throughout the year for the previous year's fellows and mentors to interact with the current group. Even though the fellows' instructional improvement projects are individual they are encouraged to collaborate on these projects with their mentors, current and past fellows, and other faculty and support staff.

Outcomes of the Program

One of the major outcomes of the teaching fellows program at The University of Georgia is the plethora of collaborative relationships that has emerged as a result of the program. The mentoring relationships which were established between the fellows and senior faculty are continuing after the fellows formally exit the program. In two cases fellows and their mentors are collaborating on major textbooks. The previous year's fellows and mentors are taking advantage of every opportunity to interact with the current fellows group. The program appears to be producing a pyramid of collaborative relationships within the University with each successive fellows group supported by an expanding base of previous fellows, mentors, and others who have participated in program activities.

The teaching fellows program has also resulted in increased dialogue regarding teaching at The University of Georgia. Untenured, junior faculty are provided an opportunity to focus their attention on important issues relating to instruction. Nominated by their deans to participate in the program, their department heads have pledged release time to support their involvement in program activities. The teaching fellows are provided opportunities to collaborate with each other and with respected senior faculty on instructional problems such as working effectively with large classes, designing good tests, and dealing with cases of academic dishonesty. The program provides fellows with an introduction to the resources available on campus to support their instructional efforts including media center staff, consultants on testing and computer-based instruction, and staff from the University's student judicial program. As a result of this program, a number of collaborative efforts have developed between these support staff and the fellows.

Summary

The teaching fellows program at The University of Georgia demonstrates that collaborative relationships focusing on teaching issues can be established across departments, colleges, and age cohorts in a research university. The program is successfully providing opportunities for faculty from diverse fields to share common concerns and interests relating to teaching. Both the senior faculty who serve as mentors and the junior faculty participating as teaching fellows engage in activities of the program voluntarily and enthusiastically. Evidence exists that the relationships established during the program continue beyond the program duration.

The teaching fellows program is funded in part by a grant from the Lilly Endowment, Inc. of Indianapolis and one additional year of support from that organization is anticipated. Plans are underway to continue the key elements of the program after the external funding ends. The fellows' release time already is funded by their home departments and the University has in place funds to support a limited number of individual instructional improvement projects. Many of the group activities can be continued without additional funding; however, funds will be required to support retreats and visits by external consultants. Even without additional funding the University can maintain the elements of the program which have been most productive in fostering discussion and collaboration among a diverse group of faculty regarding teaching. Hopefully the success of this program will encourage other institutions to engage in similar activities to promote collaboration across disciplines. Given the generic nature of many teaching issues, interdisciplinary dialogue and collaboration is probably more likely to evolve around these issues than issues relating to research. The University of Georgia program demonstrates that faculty will take advantage of opportunities provided to initiate this kind of forum.

Perhaps the most significant and lasting feature of the Lilly Program has been its influence on the total environment and ambience of the institution. For the cadre of prominent young faculty whom the program directly serves, a change in attitude has been observed. In addition to their serious approach to research a stronger commitment to teaching has developed. Through this program they hear their insitution say that teaching is important. Through enrichment received from each other, their mentors, and from exposure to so many rich resources available at the University, their entry into a career of teaching and scholarship becomes richer and more purposeful. During this formative stage of their development they are given an opportunity through interactions with an impressive support group, to formulate a philosophy of teaching that for others may not be consumated so fully. Furthermore, this process signals to others that attentiveness to good teaching can be and should be a high priority.

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MODALITIES OF INSERVICE TEACHER EDUCATION: DO THEY HAVE AN IMPACT ON TEACHING AND UNIVERSITY?

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INTRODUCTION - Fenstermacher and Berliner (1983) have identified four facets of staff development activities that seem to be potentially important. The four facets are: (a) Source of the initiative for staff development - Is it initiated internally, by the teachers who will be involved, or externally by some higher authority? (b) Target processes of the staff development - Are they intended to remedy deficiences of the teachers involved? Are they intended to enrich teachers knowledge and skills? (c) Size of the groups involved - A few teachers? Many teachers? or is it all the teachers in a school, a school district, or a state? (d) Process of staff involvement - Were the teachers involved of their own free choice, or were they required to take part?

In spite of the fact that Fenstermacher and Berliner (1983) are adressing themselves to elementary and secondary teachers, most of the facets pointed out by them could be applied to university inservice teacher education as well. Indeed more often than not further education is searched and initiated by the university teachers themselves. They are aware of their needs to keep up with knowledge and skills, though the desire to maintain their feelings of accomplishment and meaning are of no small significance. The looking for advanced studies programs is one way to fulfill such an endeavor. As Giroux (1983) has stated:"Teachers and students do not simply receive information, they also produce and mediate it"(p.58).

Cruickshank (1985) has identified several categories -and has defined models- that together presumably make-up the field of teacher education. He separates external factors, those not typically involved in the daily, on site operation of programs of teacher

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education, from internal factors that are so involved. Among the external factors are the government (federal and state) actions. In spite of not being typically involved in day-to-day on site inservice teacher education, government action - generally through the Ministery of Education- has a dramatical influence on what is or what is not done for the teachers who seek continuing education. Among the internal factors,Cruikshank (1985) identifies 'teacher education context', meaning facilities, resources and climate that institutions offer. He is concerned with preservice teacher education, but his categories and factors can be adapted to the field of inservice teacher education as well.

Marques (1984) studied the choice of university administrators and pointed out the importance of age, size and location of higher institutions as variables which explain complexity and determine, at least in part, modes and practices of a teacher career inside the university. In most universities the teachers'career, after admission, depends on further education, with rewards being given for advanced degrees (masters and doctors). The advancement in the career also depends often on research production which is most of the time presented in professional and scientific meetings. These constitute by themselves modalities of inservice teacher education and contribute, by they very definition, to teachers and teaching improvement.

Therefore, this paper has the aim of identifying modalities of university teacher education, questioning the impact of them on teaching and the university, by uncovering some of the conditions that are characteristic of different types of higher education institutions in Brazil.

Herein the expression 'inservice teacher education' is defined as any attempt to improve teachers who are already employed at higher education institutions. It includes any modalities of staff development, the ones initiated by teachers themselves or the ones initiated by government or the university administration in connection with it. It includes also the programs developed on-site, in the institution and the training - graduate studies, for instance- in another one, generally in more prestigious universities.

METHODOLOGY - University catalogs and Program booklets were searched and selected, extracting from them the appropriate information concerning inservice teacher education modalities.

The catalogs and program booklets, and in some instances reports, news releases and public commentaries were the most readily available. As each modality of inservice teacher education was identified it was placed into one of the several of the modalities -or forms- previously devised to make-up the field of inservice teacher education.

The variables that were taking into consideration, in the search above described, are shown below, in Figure 1.

UNIVERSITY CHARACTERISTICS	INSERVICE TEACHER EDUCATION
1. Age, size, location	1. Programs offered (workshops and seminars)
2. Programs of study (graduate and undergraduate)	2. Outsiders as professors or students
3. Areas or fields of knowledge offered	3. Center and services for supervision and coordination
4. Research production	4. Sending teachers to take graduate courses in other institutions.
5. Credentials of teachers (degrees)	5. Offering graduate programs in education: master and doctoral
6. Type of financing:public or private	6. Teachers attending Conferences and Seminars (level of publication)
7. Relationships with the community	7. Permeability to social movements and political issues

Fig.1- Variables taking into consideration to select schools to illustrate modalities of inservice teacher education

Schools and universities from which catalogs, booklets, folders, reports, news releases and public commentaries were searched numbered 23. By grouping and classifying them we arrived at 5 modalities of inservice teacher education: (a) workshops and seminars; (b) supervision and coordination; (c) graduate studies programs; (d) research and publication - journals and conferences; (e) self-organization through social movements.

Schools that are mentioned below, described as A,B,C,D,E therefore are not real schools. They are representatives of schools in existence throughout the country and of their modalities of approaching the inservice teacher education issues. They are ideal typical.

SCHOOL A - WORKSHOPS AND SEMINARS - The site of this school is quite advantageous. It is located in a small town, in a two hours car-distance from a big city, state capital of one important Brazilian state. It is a public, small state financed new university. Health Sciences and Medical Education are its main concern. It does not offer any graduate studies program. Few of its instructors are holders of masters ou doctor degrees, and very few of them conduct research and even fewer publish the results of his/her research or teaching experiences. So, the faculty is devoted to teaching, to students and to the learning process.

Usually the university administrators, head of Departments more often than not, manage to get financing support from State or Federal Government, to offer workshops and seminars to the faculty. Commonly this will include a 100 hours on the subject matters that teachers teach and 200 hours on pedagogy: basic sciences and methodologies of teaching. The administrator chooses and invites visiting professors or lecturers to teach the courses, distributing the hours -like for instance 60 hours for Methodologies of Teaching- and are developed in weekends or in the period of summer vacation (January, Febrauary). Generally groups of thirty teachers are constituted. These groups might be the faculty of one department or as often could be the case, teachers coming from different departments of the same university. Usually a certificate is offered and this counts for promotion (and payment incentives) in the teachers' university career.

SCHOOL B - SUPERVISION AND COORDINATION - This is a public federal financed small university. It is also classified as a rural college, since its main area of teaching and research is agriculture. It is located nearby an important hinterland city. Some of its professors are holders of master degrees in their fields of specialization. Very few of them are holders of doctoral degrees. The university has established a central program for supervision and coordination of activities, during the last decade, in order to enhance and maintain the quality of teaching offered in the institution. Planning, follow-up, small teachers meetings and the building of evaluation instruments are the main supervision and coordination activities. The instructors who are holders of advanced degrees, at least some of them, develop research and publish some of their findings in journals of regional or national circulation level. The educators who work in the supervision and coordination program also publish the results of their activities and experiences. They attend conferences and national seminars and exchange their proposals, methodologies of work and discuss their difficulties, issues and problems.

This modality of inservice training is based on the assumption that the teacher is the key element in the pursue for quality of teaching. Instructional materials are divised by teachers under supervision and exchanged with other teachers. Microteaching is often utilized as a strategy to develop basic skills and to let the teacher know his/her potentialities and shortcomings. Project approach is also developed. Each teacher submits one proposal, designing a kind of experiment to be applied inside the classroom or in the field. The teacher selects one of the supervisors - one educator by definition- to be the project advisor. At the same time he/she has the role of expert, discussing, suggesting and guiding concrete activities. On the other hand, he/she tries to link this 'practicum' to some theoretical ideas as a frame of reference. In so doing it is expected that the teacher will see the meaning of what he is doing and as a consequence to improve his or her teaching. The result might be the construction of every day practice, paving the way with thought, innovation and creative strategies. It is a participative type of planning, developing, and evaluation of the teachers daily actions which keep the teacher motivated, busy and with a sense of accomplishment.

SCHOOL C - GRADUATE STUDIES PROGRAM - This is a private non-confessional university in the hinterlands of a southern state. It is a new institution which was developed from an isolated school. Recently the community celebrated its 15th anniversary. Its main area of teaching is social sciences: economic science, law and social service. It has had a previous program of inservice teacher education based on workshops with visiting professors that was organized and offered by a Center for Pedagogical Supervision. Nowadays, beginning in the last five years this Center was transformed into an institutional Program for Teaching Improvement with the purpose to search, select and support teachers going to other universities in the nation or abroad for advanced studies: master and doctoral degrees. Preference is given to those at mid-career who are willing to go further. Uppon their coming back this particular Program, the institution tries to secure them the minimal conditions to start research in their areas of specialization in connection with teaching. Undergraduate students are engaged in the teachers'research as 'monitors'. These students receive a small amount of monthly payment as a kind of scholarship. Traditionally this university devotes itself to all types of fieldwork. Its slogan is 'let's work where the problems are'. Therefore slums, the poor, the sick, the small property owner, etc. are the sites where teaching, research and university services are developed.

Educational planning, administration, history of education in Brazil, philosophy of education, organizational behavior and intervention, and social policies are the advanced studies programs most often selected by the teacher candidates for degrees elsewhere. Very few makes the option to study educational technology, research methodology, teaching practices or other types of rather technical subjects.

It is a very common practice for the teachers of this university to work jointly on related projects. This collective type of work brings by itself rare opportunities for an inservice teacher continued education. Interaction, exchange of ideas and feelings, facing challenges together, looking for questions and trying some of the possible solutions are important factors explaining the success of this approach. When all this is said, though, we must recognize that this mode of labor division -or integration- has another outcome, that is, educational practice is improved by a close relation to research and that research becomes more relevant because of a deeper understanding of educational practice. Philosophically, the major emphasis of this Program is on the reeducation of teachers in order for them to contribute knowledge to the understanding of diagnostic interventions and activities in a changing on-going systems, having an horizon of possibilities to transform them.

SCHOOL D - RESEARCH AND PUBLICATION - JOURNALS AND CONFERENCES - This university while celebrating its 50th anniversary in 1984 is, in fact, at work since the beginning of this century. The oldest schools were established in 1895, 1884, 1897. It belongs to the Federal System of Higher Education. It has 80 departments offering undergarduate programs in Biology and Health Sciences, Engineering and Exact Sciences, Human and Social Sciences, Letters and Fine Arts. These undergraduate programs are organized in such a way as to offer 78 different careers -career preparation is in the undergraduate level in Brazil- with 16 thousand undergraduate and one thousand graduate students, in the year of 1985. It offers five doctoral programs and 30 master programs, with almost 500 full-time professors as advisors, attracting students from all over the country, to improve their skills as teachers and researchers. It is interesting to underline that this modality brings further training for teachers on the job, though at the beginning of their teaching careers.What is aimed at is not only the basic requirements which degree candidates must meet, but the competence necessary to become a productive researcher and scholar. Master and doctoral students must follow at least 60 hours course on Pedagogy and Methodology of Teaching beyond the core of their specializations.

The educators - professors of masters and doctoral programs - have their own graduate studies, most of them holders of degrees from wellknown foreign universities. They keep up with their field of concern and the betterment of their teaching through exchanges within the community of scholars, publishing in national and international journals. At the same time, they travel a lot to present their findings in Congresses, Conferences and Seminars. Referee criticism, as the usual process for the approval of articles and papers, is one of the important factors in the continuing education of these teachers. On the other hand, they are also holders of university positions like department heads or team leaders in which they take major responsibilities for the study and design of curriculum and for the supervision of teachers inside the university. As theses and dissertation advisers, they also have the opportunity, through the process of building new knowledge, to reconstruct their concepts and educational experiences, up-dating their own knowledge and skills.

SCHOOL E - SELF-ORGANIZATION THROUGH SOCIAL MOVEMENTS - This is a private catholic university which has been offering all kinds of undergraduate programs, plus graduate ones, for more than 40 years. It is located in a state capital city and it benefits from the almost one dozen higher institutions nearby. Most of the teachers are part-time, working at same time in two or three of these other higher institutions. It is organized in four centers - Social and Human Sciences, Applied Social Sciences, Technology and Exact Sciences, Biology and Health Sciences - with 30 huge departments which correspond in other universities to schools, institutes or colleges. It is devoted to research and to diffusion of findings with many connections with the private and governmental sectors of business. It also contributes to articles and papers in national and international journals, scientific seminars and professional meetings.

In the last ten years, though keeping up with its mission, some groups of teachers, inside their own departments, started to be organized to engage actively in social movements. In the early 80s these took the form of strikes to struggle for better salaries. However, more recently the political opening of the Brazilian Government regime, the fight against all kinds of censorship, the option for poverty, the defense of small agricultors -called as 'the landless ones'- took up the enthusiasm and the efforts of expressive numbers of teachers. Students are envolved in the same fights and they are highly motivated to study in order to improve their skills to face political, economical and social issues. It is no surprise that in the process teachers and students change their view of the world, the concepts they hold about man and society and, perhaps more importantly, they change their view about themselves and their roles in an underdeveloped country.

This modality of inservice teacher education is non conventional by all means. Nevertheless, it proves to be very efficient, and a possible explanation for it, is that a problem solving strategy is embodied within the social relations at the level of actual practice. The issues and questions are very concrete and challenge the intelligence, the abilities and the imagination of teachers and students. They learn a great deal, not only among themselves, but also through the tactics they have to plan and divise to go prepared to the arenas of the wider world. To be aware and politically conscious, to have a mission not only to impart knowledge, but to use it to transform social structures - they call themselves radicals- are the main philosophycal bases that motivate and sustain their actions. They move between action and reflexion which leads them to build the gap between theory and practice, between what one says in discourse and what one does in the real world dillemas. Perhaps here is one promising mode to overcome the contradictions and distances between theory and practice. This, after all, has been one prevalent problem along history, in teacher education, probably all over the world."It is in the dialetical relations between consciousness and unconsciousness, experience and objective reality, that the basis for critical thought and action has to be grounded and developed"(Giroux,, 1983, p. 150).

The different modalities of inservice teacher education aforesaid do not take place exclusively one at a time. At the same institution one can finds all of them being used at the same time, though in distinct schools, institutts or departments. However, some types of training programs - like publication of research findings- will not be found in small institutions, because it depends more often than not on the presence of graduate programs which offer degrees or certificates of advanced studies. Therefore, it has indeed a kind of hierarchy among the modalities that were described. Such an hierarchy has to do, among other variables with age, size, location, wealth of resources and status of the institutions.

Characteristics	Schools		A	B	C	D	E
Location	Capital					x	x
	Hinterland		x	x	x		
Programs	Undergraduate		x	x	x	x	x
	Graduate					x	x
Size	Small		x	x	x		
	Large					x	x
Age	Old			x		x	x
	New		x		x		
Administration	Public	Federal		x		x	
		State	x				
	Private	Catholic					x
		Non-confessional			x		
Modalities of inservice teacher education	Workshops and seminars		x				
	Supervion and coordination			x			
	Graduate studies programs				x		
	Research and publication					x	
	Self-organization through social movements						x

Fig. 2 - Modalities of inservice teacher education and school characteristics

DISCUSSION - It is our view that the inservice teacher education approach is better suited to the nowadays dynamic trends of higher education than the preservice one, not only because of the "disestablishment of walls between departments and the multidisciplinary education" (Fulop, 1977, p. 28) but also because the flexibility that is accomplished when programs get away from formal schooling.

"We would be on the way to desabuse ourselves of the idea that manpower qualification must precede employment, that schooling must precede productive work. There is no reason for us to continue the medieval tradition in which men are prepared for the 'secular world' by incarnation in a sacred precint, be it monastery, synagogue or school" (Illich, 1974, p. 99).

Meanwhile, perhaps the most important question is what is the impact of any modality of inservice teacher education on teaching, on the university as an institution of higher learning, and in education itself?

The changes in the roles and the very mission of the university -higher education for masses and not for the few, part-time faculty, community based instruction (field programs), universities as sites of political struggles to uncover forms of domination, the shift from technical towards social emphasis, etc. - brings a new and sometimes surprising meaning that affects the modalities and the philosophy of teacher education. "As their role become more important so their education will need to be properly geared to the progress of science and to the needs of society, and this not only in developing, but also in developed countries" (Fulop, 1977,p.21).

It is a fallacy to rely on the assumption that teachers are not adequately prepared to fulfill the tasks they must face. That they need always further training to meet the concrete challenges they face within their routine concrete activities. The roles of the teacher are becoming different from the traditional ones (Marques, 1982). Instead of being the only source of 'wisdom', the teacher becomes the facilitator of learning. At the same time, the role of the student is becoming exceptionally rapid to be the partner within a team, instead of being a second category of 'worker' to be helped and assisted. The aim is that "the learners should be able to think critically and independently towards identifying and solving real and relevant problems, they must be responsible for their own learning and they must be given opportunity to put into practice what they have learned" (Fulop, 1977, p. 28).

So, we have to question the correctness of some assumptions that are deeply embodied in our conceptions and practices of teaching and learning. That we still lecture, we still expect people to listen and then to regurgitate a product of that listening at the end of a given period of time. We have to question also that when the 'activities' haven taken place our students are going to be good practitioners in the real world. Thus, to educate teachers - if that is not an utter pretension - is a matter of criticism and analysis of whom they are and what they are intending to be in connection with their real world, rather than a process of diskiiling and reskilling them to better technical and bureaucratic control, at the level of actual practice (Apple, 1985).

Figure 3 summarizes the main ideas of this vision and of this paper, trying to reach some level of conclusiveness.

TRENDS IN CURRICULUM

- Disestablishment of walls between departments
- Multidisciplinary education
- Flexibility - option of programs and courses
- Broad general studies base
- Practice to inform and to 'form' theory

AIMS AND STRATEGIES

- Higher education for masses
- Part-time faculty
- Community based programs
- Sites of political struggle
- Social mindful approaches

ROLES OF THE TEACHER AND OF THE STUDENT

- Facilitator of learning (instead of the only source of 'wisdom')
- Creator of learning environments (instead of lecturer)
- Partners within a team (instead of vertical relationships)
- Critical and independent thoughtful analysis of issues (instead of functional efficiency)
- Finder of real and relevant problems (instead of ideologized contents)

Fig. 3 - Elements that mediate change and transformation, presumably making up the field of inservice teacher education

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INSTRUCTIONAL DEVELOPMENT:
AN INTENSIVE, INTERDISCIPLINARY APPROACH
DIRECTED AT NEW FACULTY

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Faculty development has been conceived in many ways, as Bergquist and Phillips have pointed out.[1] This paper suggests that stress on instructional and personal development at the outset of a university career provides institutional as well as individual benefits.

Three points are common to programs in faculty development, renewal, retooling, or whatever word may be au courant: emphasis on one-on-one consultation, often using "master teachers"; recognition that the variety of disciplines necessitates consequent diversity of teaching styles; and a tendency to focus on refreshing experienced individuals who, for one reason or another, confront the danger of stagnation. In most cases, of course, the onus rests with the individual rather than the institution; for, as Centra recently observed, "Colleges historically have expected faculty members to bear the responsibility for their own professional and personal development."[2] For a variety of reasons, however, greater institutional attention and support is being given formal programs for staff members. Among these reasons, one can point to a general trend toward continuing education in the professions, rapidly developing fields of knowledge, shifts in student interests requiring retooling of tenured faculty, and concern with "burn-out," among others. Faculty development thus frequently involves reinvigorating senior faculty members and providing them new bases for teaching. It takes a variety of formats, dependent on the institution, discipline, and views of colleagues, and embraces a gamut of approaches and perspectives. Programs are customarily conducted during the academic year, and generally directed toward individuals with at least a few years' experience at the particular institution.

Faculty development in this sense can be distinguished from faculty orientation. The latter process -- usually crammed into the initial weeks of a semester -- involves (at least at large universities) the formalities of employment: health insurance, retirement benefits, parking privileges, dos and don'ts of registration procedures. Orientation admittedly can be conceived of as a far more protracted process. Understanding the "folkways" of the particular institution comes osmotically, often with the encouragement of a chairman or senior administrator who takes the newly-arrived colleague under his or her wing. In this sense, orientation is on-going and, in a sense, unending. The more common sense of the term, however, suggests a relatively mechanical, relatively non-academic process, in which administrators rather than colleagues play the chief roles, during a frenetic period at the start of persons' faculty careers. Such an approach, while perhaps necessary in view of the complexity of "multi-versities," risks alienating those who have just arrived. By contrast, an orientation to the university as a whole that stresses the primary obligations of teaching and research and provides helpful hints for them helps build stronger identification of individuals with the institution. Such an understanding can play a key role in faculty development. These points will emerge in looking at the State University of New York at Buffalo.

The University at Buffalo is the largest campus in the State University of New York, with more than 27,000 students, close to 300 registered degree programs (including 83 at the doctoral level), and a gamut of professional and academic units typical of a large, long-established public research university. With nearly 3,800 budgeted positions, the University is the largest single employer in a metropolitan area of one million. It thus has a major impact on the area's economy -- and in recent years has stressed research and development that could directly benefit the area as a whole. After close to a decade of relatively slight hiring, owing to budget stagnation and redirection, the combination of additional funds and retirements led to more active faculty recruitment, with approximately 80 new full-time faculty being hired in both 1984 and 1985. More than half of them attended the special development programs, designed to bolster their teaching skills and grant proposal writing savvy, in the week immediately prior to the start of the fall semester.

Four factors led to the creation of the program in August 1984:

1. Faculty concern about the quality of teaching, and recognition of the need for improvement. This interest had been manifested in (among other things) Faculty Senate resolutions on instructional responsibilities in undergraduate courses, on mandatory evaluation of instruction by students in all courses, and on establishment of a center for teaching effectiveness.

2. Faculty and administrative concern about the needs of new faculty colleagues. Due in part to the absence of a central University orientation program, as well as to the scattered, diverse nature of the campus (in reality, three different campuses, four associated hospitals, and scores of off-campus locations), individuals lacked a clear sense of the overall expectations, policies and values of the University, at least at a level higher than their respective departments. "Departmentalitis" was widespread; a sense of the

University as a whole weak and scattered.

3. Administrative concern about improving teaching and facilitating research. Rates of student attrition higher than desirable, among other factors, led to greater stress on teaching quality; levels of sponsored research lower than desired led to increased concern about grant-seeking activity; both ends could be served by careful orientation of new faculty.

4. State and union interest in enhancing professional development. The 1982-85 agreement between the State of New York at the United University Professions established a joint committee that, among other goals, would "implement programs for professional development and training programs which will improve job performance and assist employees in developing their full professional potential and in preparing for advancement." Intensive training of new faculty fell within the scope of the committee's duties and resources.

Two features relatively uncommon in faculty development programs were stressed at Buffalo: extensive reliance on multi-disciplinary small groups; and mandatory use of videotaped mini-lectures by participants, with commentary by others in the small group. Each feature merits brief discussion.

Persons new to a university (or, indeed, to any large organization) frequently start their careers with relatively few acquaintances outside their own unit; although they formally have many colleagues, the circle of close associates will be restricted. The pressures of a highly competitive environment with what could be perceived as a near exclusive stress on research could undermine the role of teaching. The multi-disciplinary small groups were designed to provide the equivalent of instant peer groups. Members discussed their mutual and individual expectations of teaching, creating thereby a basis of trust. By working on specific, individual solutions to a problem common to all -- for example, preparation or final polishing of a detailed syllabus to be used that semester; application of specific teaching techniques to various instructional settings -- small group participants came better to understand issues in teaching. More important, they gained a sense of commitment to one another, especially important in micro-teaching, the second relatively unusual feature.

All participants were required to speak before both the unblinking eye of a video camera and a "class" of "students," the fellow new faculty from a variety of disciplines. Each mini-lecture (for time reasons, presentations had to be limited to 10 minutes) was privately rated by all participants (typical items included clarity of speech, eye contact with audience, and use of illustrations), then commented upon orally, first by the presenter, then by other members of the small group. As shown in Tables 1 and 2 below, participants found microteaching the most valuable part of the small group experience: more than 80 percent in 1984 rated it of "great" value; in the two years only 3 of the 90 participants found micro-teaching of "little" value. The combination of micro-teaching and small groups proved mutually reinforcing.

No group of faculty needs greater attention of certain types than do new faculty. Generally young, non-tenured and relatively inexperienced, they bring to their new positions extraordinary mixtures of energy, naivete and aspirations -- all of which can be quickly squeezed out by distant colleagues or an unwelcoming atmosphere. By linking the purposes of instructional and personal development with institutional orientation, as was done at the

University at Buffalo, significant benefits can accrue. For, as Eble and McKeachie recently pointed out, "Young faculty members need a sense of support from their peers; thus activities involving the development of communication and cooperation among younger faculty members are likely to be valuable."[3] For an expenditure of approximately $800 per attendee -- half of which was provided to them directly as a cash grant for instructional development -- the program at the University at Buffalo succeeded. It offers a model other large universities may choose to examine.

However, a concluding caution must be raised. The bonhomie and enthusiasm of the first week can quickly shrivel in the pressures of the semester. Interviews and discussions carried out with the participants in the 1984 and 1985 programs show a clear need for reinforcement. Central in this process must be mentors, preferably senior faculty members from the same department or a closely related discipline who would occasionally sit in class and comment on their junior colleagues' teaching. In the absence of these, young faculty continue to feel some sense of academic and interpersonal isolation within the University. The heavy research emphasis at the University makes it difficult to maintain a high degree of enthusiasm for, and commitment to, teaching. Hence, periodic reinvigoration of new faculty, using the small groups for functions that are both social and intellectual, has proven valuable.

To show that concern for quality teaching, and encouragement for effective proposal writing, extend beyond a few days into the very fabric of the institution is ultimately the most important lesson. "Orientation" in that sense becomes on-going "development." A program scheduled prior to the start of the academic year has the advantage of not competing with teaching assignments, committee obligations, and the myriad of other responsibilities that fill the regular semester. However, the intensity and novelty of the pre-term experience diminish. Only by regular, careful renewal do new and junior faculty come to enjoy a sense of full colleagueship with their peers.

Footnotes

1. W.H. Bergquist and S.R. Phillips, "Components of an Effective Faculty Development Program," *Journal of Higher Education* 46 (1975), pp. 269-282.

2. John A. Centra, "Maintaining Faculty Vitality Through Faculty Development," in Shirley M. Clark and Darrell R. Lewis, eds., *Faculty Vitality and Institutional Productivity: Critical Perspectives for Higher Education* (New York: Teachers' College Press, 1985), p. 143.

3. Kenneth E. Eble and Wilbert J. McKeachie, *Improving Undergraduate Education Through Faculty Development* (San Francisco: Jossey-Bass, 1985), p. 222.

Table 1

Perceived Value of Small Group Activities, 1984

	Great	Some	Little	N/A
Developing teaching philosophy	46	38	8	8
Teaching and learning style	46	42	8	4
Syllabus development	20	60	25	5
Developing goals/objectives	35	52	13	0
Lecture technique	58	38	4	0
Use of media	36	48	12	4
Preparing for micro-teaching	48	40	8	4
Evaluating own micro-teaching	88	8	4	0
Evaluating micro-teaching of others	81	19	0	0

Table 2

Perceived Value of Small Group Activities, 1985

	Great	Some	Little	N/A
Developing teaching philosophy	58	25	7	10
Teaching and learning style	46	46	8	0
Syllabus development	49	36	10	5
Developing goals/objectives	49	38	10	3
Lecture technique	65	27	6	2
Use of media	50	32	13	5
Preparing for micro-teaching	63	24	9	3
Evaluating own micro-teaching	73	24	3	0
Evaluating micro-teaching of others	64	33	3	0

All figures expressed in percentages; based on questionnaires filled out by participants on the final day of the teaching workshop. Percentages may not equal 100 due to rounding.

Rank Order of Most Useful Features, 1984

Microteaching
Morning topic presentations
Small group discussions
Information and services

Rank Order of Most Useful Features, 1985

Microteaching and feedback
Morning presentation on teaching
Getting to know new faculty

Overall question: "Would you recommend a similar program next year?"

— 100 percent of those responding answered affirmatively.

EXCELLENCE IN UNIVERSITY TEACHING: A NEW STAFF DEVELOPMENT PROGRAMME

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INTRODUCTION

Educational research has provided us with insights into the nature and processes of student learning and with advice on effective teaching methods and strategies of facilitating student learning. However, theory has had little impact on the practice of the majority of university teachers. How can this gap between educational theory and university teaching practice be bridged?

At primary and secondary school level there is provision for formal teacher education and in-service training. At tertiary level professional development is a fairly recent concept and concern. Teather (1979) provides a useful view of staff development in universities all over the world. Cannon (1983) surveys the literature on the professional development of University teachers in Australia and suggests that past efforts to improve the quality of university teaching have not been very successful. Four reasons why success has not been forthcoming are explored:

- a failure to appreciate the distinctive organizational characteristics of universities and the mechanisms of innovation and change in universities;
- the characteristics of academics and their work as teachers;
- the "improvement" approaches within the universities have been inappropriate or poorly executed; and
- the "forces of change" to improve teaching have been weak. (p. 4)

Cannon's analysis of statistical information, research studies, reports and official recommendations on professional development (especially those by the AVCC's Working Party, 1981) leads him to the conclusion that these have had little impact on staff development and on improvement of university teaching since the 1960's due to the absence of an adequate general theory of professional development.

He suggests topics for further research, one of which is: "the evaluation of the design and practice of professional development activities" (p. 65). The present study is an evaluation of the design and implementation of an "Excellence in University Teaching" (EUT) programme which has been adapted from the well established "Excellence in Teaching" (ET) programme at secondary level (Hamilton, 1984; Smith, 1985). This adaptation to teritary level was trialled with faculty staff in the School of Modern Asian Studies at Griffith University in 1984/5.

There is increasing pressure on university academics to perform not only as scholars, but also as good teachers. These pressures come from outside the university (e.g., government, community organisations, media), from the institution itself, and from students. Many academics want to improve and become more successful teachers. Such teachers might have attended the occasional staff development workshop and consulted educational developers in Higher Education Research and Development (HERD) centers; however, there are as yet no comprehensive, intensive and effective programmes available to assist them. EUT aims to fill this gap.

The authors realise that this paper (like other research papers or books on staff development) will not make a direct impact on the practice of university teaching, but believe that the process of the EUT programme itself will. The intention of the paper is to inform administrators and educational consultants or staff developers about EUT and to present some evaluative evidence that this model does effect change at the practical level.

The rationale for introducing EUT is to provide an intensive and effective programme which has been needed and requested on many occasions, both formally (e.g. Williams Report, 1979, and the AVCC Working Party on Staff Development, 1981) and informally by individuals and groups of academics. As Moses (1985a) has shown, University students and staff are able to discern excellent teaching and to describe the main professional and personal skills and attitudes which are characteristic of, and essential for, excellence in teaching. Independent of the ET or EUT programme, Moses had defined excellence in teaching on the basis of a student questionnaire (used for student evaluation of teaching) and of five case studies of superior teachers at the University of Queensland. She arrives at the following equation:

competence in subject matter
+ communication skills
+ commitment to facilitating student learning
+ concern for individual students
= superior teaching

The EUT programme is designed to develop the above professional and personal skills and attitudes in teaching staff.

The following methods were used to arrive at the design and evaluation of EUT:

1. Observation of the secondary school programme.
2. Consideration of its applicability to the university context by the observer and course designers.
3. Design of the trial programme.
4. Implementation of the trial programme.
5. Progressive evaluation through participant observation, by open-ended questionnaires and informal discussion with participants.
6. Final evaluation by questionnaire, interviews and an evaluative group discussion six weeks after the trial programme had been completed.
7. Review of the total EUT trial process and redesign of the EUT programme for future implementation at Griffith University.

This paper presents a novel approach to university staff development with regard to aspects of teacher-student interaction, teaching strategies, educational planning and course management. We have evidence to believe that the success of the EUT programme has been due partly to its base in relevant educational research, but mainly to the processes designed to facilitate regeneration of established theories and principles through group discussion. This is achieved by raising participants' existing knowledge and experience to a conscious level, rather than by disseminating new information unrelated to their personal knowledge. Other factors contributing to the success of EUT are the integration and interrelation of the individual modules in the programme and the participants' immediate practical application of each module to the lecture/tutorial situation, with subsequent discussion and evaluation of these applications and participants' creative innovations.

We now turn to a brief description of the EUT trial programme before discussing its evaluation and review and drawing some conclusions from this trial for future development and research.

DESCRIPTION OF THE EUT PROGRAMME

Like Excellence in Teaching (ET), Excellence in University Teaching (EUT) is a module-based staff development programme designed to help university teachers to bridge the gap between theory and practice in higher education, and to translate certain research-supported theories into effective, practical strategies for application in lectures, tutorials, seminars and practical laboratory sessions. The programme focuses on four major process areas of university teaching: course management; educational planning; teaching strategies; and teacher-student relationships.

The EUT programme is a cohesive fusion of Glasser's theories of discipline, positive communication, teaching and self-discipline (Glasser, 1969, 1980, 1984) with Hunter's principles of, and strategies for effective learning and teaching (Hunter, 1976, 1983). While the programme is grounded in these research-based theories, the workshops are conducted with a very practical approach emphasising the need for faculty staff awareness of effective teaching principles and their immediate application to lectures and tutorials. Participants are encouraged and assisted to relate all ideas from the sessions to their own individual concerns, problems, or interests.

Success for both students and lecturers is a central theme of the EUT programme which promotes expertise, especially in the areas of motivation, lecture/tutorial design, reinforcement and key questioning techniques. The programme also helps academics to gain greater insight into student behaviour and to develop student decision-making skills and self-discipline through awareness of self-responsibility. Table 1 (adapted from Smith, 1985:5) presents a brief description of each of the ten modules in this programme.

Attendance of the EUT programme is on a voluntary basis. Participants are encouraged both to contribute ideas based on research and experience, as well as to implement and evaluate new strategies and techniques. Throughout the programme the workshop leaders (usually two) model the process, strategies and techniques they are presenting. Participants may expect to be actively involved in a variety of ways: at appropriate times, they may work individually, in pairs, in discussion and problem-solving groups; they may contribute relevant ideas and experiences, ask questions, analyse case studies, and participate in simulation activities.

To optimise the value gained from discussion and sharing of resources and experiences, the workshop group should consist of no fewer than ten and no more than twenty-five participants. During the trial EUT programme at Griffith University, attendance varied - due to other commitments of teaching and committee work - from seven to fifteen staff members. The 1984/5 programme, comprised of a series of four three-hour workshops, has been revised in the light of our experience with, and evaluation by, participants. The evaluation results are discussed below.

Table I: The Excellence in University Teaching Modules (adapted from Smith, 1985:5)

Module 1: Programme Overview
This session describes the purposes, content and processes of the programme, and clarifies the demands that will be placed on participants.

Module 2: Success Pathways: Building a Positive Learning/Teaching Climate
Glasser suggests that there are four basic psychological needs for happy, successful lives. This module looks at ways of developing a positive educational climate which provides the opportunity for both academics and students to have these needs met daily.

Module 3: Designing Lectures for Success: Prime Time: Catering for Different Learning Styles
This module addresses the principles of an effective lecture design, and includes suggestions as to when, during a lecture, retention and learning is likely to be optimised, and how university teachers may cater for the preferred learning modes of their students.

Module 4: Motivating Students
This module highlights techniques that have been found to be motivational, leading to more successful learning.

Module 5: X-Raying Behaviour: Minimising Conflict: Assessing and Building a Positive and Valid Self-Esteem in Students
In this module, the links between self-esteem, behaviour and achievement are explored; characteristics that can indicate self-esteem problems are identified; and ways of building positive self-esteem, especially for students 'at risk', are suggested.

Module 6: Increasing Productive Behaviours: The Power of Reinforcement
This module explores the appropriate use of positive and negative reinforcement in the teaching and learning processes.

Module 7: Establishing Effective Rules for Academic Behaviour
The emphasis in this module is on the exploration of ways to establish and maintain proper academic behaviour, e.g. avoiding plagiarism; submitting essays and assignments on time; attendance of tutorials and participation in discussions.

Module 8: Academic Improvement Circles: Developing Critical Thinking Skills
This module examines questioning strategies that help students to raise their level of thinking from 'recall' to 'analysis' and 'evaluation'.

Module 9: Problem Analysis: Problem Solving
During this module, the principles from the previous eight modules are used to address participants' specific problems of teaching, assessment and student learning.

Module 10: Building Influence with Students and Colleagues: Glasser's Five-Step Approach to Discipline
This module addresses Glasser's approach to discipline, which emphasises 'self-discipline' and 'self-responsibility' through a process that enables students to accept the consequences of their behaviour.

EVALUATION RESULTS

Prior to the start of the EUT programme participants were asked to indicate their priorities on a list of 20 concern areas.

Table II shows the five indicators of staff needs and motivational factors (for attending the programme) which received the highest ratings.

Table II : Staff Needs, Concerns and Priorities

Staff Priorities: how to	Mentions
design lectures and tutorials for more efficient and effective learning	13
develop better teaching skills	10
motivate students to study	9
improve students' confidence and attitudes towards learning	7
help students develop more responsibility for their own learning	5

These indicators were useful to the EUT leaders in planning the programme. During the programme, emphasis was placed on these concern areas as foci of discussion and as evaluative measures to gauge whether staff expectations had been met. An evaluation of this EUT programme was conducted progressively so that modifications could be made during the programme as well as on completion.

After each workshop participants were asked to respond to a brief questionnaire seeking information on (1) what they found most useful and relevant to their teaching and to other commitments in the School of Modern Asian Studies (MAS), (2) what they found of little or no relevance/use, and (3) what improvements, if any, they would suggest with regard to the content and the process of the particular workshop.

The following are typical reactions/comments after the first workshop:

- It was valuable to reflect on the significant aims of teaching and learning and how we, as teachers, react to students and each other psychologically.
- I gained new insights into human behaviour and motivation.
- I enjoyed the session but I was more passive than I would have liked.
- More educational research data is needed.
- I was unclear about the rationale for the structure of the programme; perhaps it was too simplistic.

From this feedback, modifications were made to subsequent sessions, e.g. the leaders included more discussion, interraction time, and examples that were relevant to teritary level teaching.

A further evaluation was conducted by: a questionnaire immediately following the final workshop; an evaluative group discussion six weeks after the completion of the trial programme; and an interview with the Dean of the School of Modern Asian Studies who had also been a participant.

The questionnaire requested information on each module regarding application of ideas developed during the module; potential usage; relevance to teaching roles; timing, organisation and conduct of sessions; and an overall rating. Suggestions for additions, modifications and deletions were also invited. Five participants responded in writing to this comprehensive questionnaire while others preferred to provide feedback orally.

Table III lists those modules which were generally regarded as highly relevant and applicable to university teaching and learning and the reasons for this rating, illustrated by representative comments from participants.

Table III : Modules of high relevance and applicability to university education

Modules	Comments
basic need - success pathways	gaining of more insight into student behaviour and, therefore, more direction in planning
learning styles	increased awareness of individual differences in learning styles for both students and lecturers and the implications for teaching. "I am going to consciously try to incorporate more learning modes (auditory/visual/ kinesthetic) into my teaching preparation";
lecture design	more conscious use of lecture design, especially planning the steps that focus students' attention and check their understanding
self-esteem and reinforcement	consideration of a range of emotional and psychological factors that affect teaching and learning. "I have learned to be more positive and encouraging with students";
student motivation	one lecturer developed student check sheets for essay writing and oral tutorial presentations with good results

A comparison of Table II with Table III shows a noticeable shift in staff attitudes and priorities from a lecturer-centered to a more student-oriented approach to university teaching.

The rest of the modules were rated medium/low in relevance and applicability to university teaching. Reactions from participants to these modules included positive as well as negative comments. For example, with regard to questioning techniques, one participant reported that more conscious planning on his part stimulated effective discussion, while another colleague found these questioning techniques difficult to implement. Participants indicated varying degrees of successful application for the modules relating to "power bases," Glasser's "responsibility steps," and "influencing others." Problem solving was regarded as a valuable technique with wide applicability in tertiary teaching. It was suggested that more time should have been allocated to this module. All respondents indicated that it would have been advantageous to have the sessions closer together, e.g. weekly or fortnightly, rather than a month or more apart.

Most comments stated that the workshops were well balanced and used a variety of workshop methods. Overall the programme design was considered to be appropriate. Suggestions for improvements included:

* more university examples rather than high school examples;
* more research references supplied for subsequent reading;
* a clearer outline of the overall structure of the programme;
* more time to apply information to university situations;
* fewer evaluation questionnaires;
* further exploration and critique of conventional approaches to university teaching.

In an interview conducted with the Dean of the School of Modern Asian Studies the following points were highlighted:

> "The programme was very valuable. It was well structured with a useful, logical progression from one topic to the next. Issues raised were relevant to tertiary education

> and the programme leaders communicated ideas well...my main disappointment was the fact that so few people turned up to the programme...I certainly thought it was worthwhile and I would encourage its adoption."

A group evaluation was also conducted six weeks after the completion of the trial programme. This time lapse allowed for the implementation of ideas and general consolidation of reactions to all modules incorporated in the EUT programme. Responses are summarised as follows: Overall reactions from the group interviews indicated that those present felt the programme to be valuable and enjoyable and that there is definitely a place for this type of course at university level for all educators. One participant stated that he was now more conscious of planning and trying different techniques, as well as allowing for some fun and enjoyment in lectures. Some felt that motivation should be a student's, not the lecturer's responsibility because in a university situation, there is less contact time between students and lecturers; and students need to work more independently than at high school.

DISCUSSION

It is interesting to compare these evaluation results of the first trial Excellence in University Teaching programme, conducted on a small scale, with Smith's (1985) more extensive evaluation of the Excellence in Teaching programme at secondary school level. Smith provides a useful overview of the organisation and implementation of the ET programme in Queensland from its first introduction in 1982 through its progressive development up to 1985. He evaluates the ET programme by mainly three methods: A review of the available documentation, participant observation, and essentially unstructured interviews with programme leaders and over one hundred educators who participated in ET. Smith (1985:20) concludes that the data collected provide strong support for the success of the ET programme, primarily because of six characteristics. In terms of the EUT programme, the present authors believe the same characteristics apply as reasons for success: EUT was:

1. developmental because of its coherence and the interrelatedness of the ten modules;
2. practical because academics were able to apply the EUT principles to their lectures and interactions with students;
3. contemporaneous because discussions were relevant to issues and concerns of direct interest to staff and students in MAS;
4. school-focused because participants were members of the same work group, i.e. the School of MAS:
5. teacher-conducted, in that the leaders were seen to be excellent teachers themselves, trained in secondary teaching and with experience in tertiary education;
6. maintenance-oriented, because EUT was perceived as building on the academics' existing knowledge, expertise and skills, rather than implying a remedial state of their abilities.

It is too early yet to identify the short-comings and issues for concern of the EUT programme. Therefore, it might be useful to start with Smith's (1985:20-21) identification of the limitations of the ET programme and to draw conclusions from his study for EUT. Three major issues seem to emerge. First, a crucial variable for success, according to almost every educator interviewed, is the overt, visible, continuing support of the school principal. In our study the Dean of MAS was actively involved in, and strongly supportive of, EUT which may account for the perceived success of the trial programme. It might be true that EUT has little chance of success unless the Dean or Head of Department participates in the programme itself and encourages staff to attend the sessions. Moreover, the reward system of tenure and promotion might have to be seen to be linked to this staff development to provide a strong incentive for staff to set their priorites. As Moses (1985b) has shown, the role of heads of department and their "encouragement" functions are crucial in the pursuit of excellence. Staff from eight departments of the University of Queensland were asked to give feedback to their heads by filling in a questionnaire. In a nutshell, staff wanted their head to encourage good teaching in the department, to stimulate research and publication, and to take account of each staff member's special talents and interests. However, structured interviews with over one hundred staff showed that the majority of staff did not experience any encouragement for excelling in teaching, whereas most heads were seen to encourage research and publications. The main suggestions mentioned by staff to promote excellence in teaching are related to the following six practices which were also reported by staff in departments that do encourage teaching:

1. Regular discussion of teaching and of the curriculum.
2. Regular evaluation of teaching and feedback on teaching, and evaluation of courses.
3. Encouragement from the department for participation in activities.
4. Peer review of teaching and content.
5. Outside vetting of teaching.
6. Acknowledgement of teaching in promotions. (p.16)

A head or dean can be assisted in all of these tasks by the EUT programme and its follow-up activities.

Second, the success of the ET programme appears to depend on the personal characteristics of the workshop leaders, on their skills in communication and group leadership, and on their effective experience as classroom teachers. In the trial EUT programme, participants' comments on the leaders' characteristics and skills were positive. However, since the leaders were experienced in staff development at secondary, not at tertiary level, and unfamiliar with the details of the curriculum in MAS, some participants commented after the first workshop that they would have preferred more examples relevant to their tertiary teaching. Subsequent induction and planning sessions with the leaders before each workshop appear to have remedied this shortcoming. Thus, the selection and training of EUT leaders will be crucial for the success of any EUT programme. Professional associations, such as HERDSA (Higher Education Research and Development Society of Australia) or SRHE (Society for Research into Higher Education in the UK) may consider the selection and training of EUT leaders at a national level.

Third, the success of the ET follow-up activities, according to Smith (1985), seems to depend in part on the personal characteristics of the "advisers" appointed by each school. The advisers must be regarded by their colleagues as effective teachers and communicators. With regard to EUT, we have not pointed out yet the importance of the follow-up activities. Like ET, EUT must be developed as an ongoing process, not a one-off event. Therefore, each University Department or School has to select one or two "advisers" or, in terms of the AVCC's Working Party's recommendation, a senior academic responsible for professional development and generally acknowledged by his/her peers to be effective as a teacher as well as a researcher.

The role of these advisers is to liaise with the EUT leaders, to meet professionally with EUT leaders and advisers from other tertiary institutions, and primarily to organise formal and informal follow-up activities in their own department/school. For example, the six categories of activity mentioned above (as suggestions by staff from the University of Queensland to improve excellence in teaching) would be appropriate follow-up activities within the framework of the EUT programme.

CONCLUSIONS

This paper is but an exploratory study of the design, implementation and evaluation of a new staff development programme on "Excellence in University Teaching" (EUT). More follow-up development and research need to be done at Griffith University and, hopefully, at other tertiary institutions.

This case study of the first EUT pilot programme may be considered as a systematic and positive approach to staff development and to reaching towards excellence by focusing on university teachers' strengths, existing knowledge, expertise, and individual talents, rather than starting from their weaknesses, deficiencies, problems and then trying to improve them. Feedback from participants suggests that the content and process of the trial EUT programme in 1984/5, on the whole, has been successful and appropriate to their tertiary teaching practice; and that they recommend the continuation of EUT in 1986 with some minor changes (e.g. scheduling; providing more references and time for discussion; and fewer evaluation questionnaires). Participants reported that they had changed or developed their teaching skills and attitudes towards students, and gained a conscious awareness and insight into the practice and theory of the learning-teaching process, directly relevant to their role. If academics discuss and discover principles of effective learning and excellent teaching in the direct context of their everyday practice, it is more likely that these principles and theories will be expressed in a language which is their own and not inaccessable as is often the case with the terminology or jargon of educational research produced by theoreticians or educational research specialists. Thus, the EUT programme may be seen as one way of improving university teaching and of bridging the gap between educational theory and practice, for it facilitates a framework and process in which theory becomes relevant, accessible, re-discovered and meaningful to practitioners. Other tertiary institutions or higher education societies intending to adopt EUT may need to consider the essential variables for the success of EUT in their own institutional contexts (as pointed out by Smith 1985 for ET): the support of the head or dean; the selection and training of full-time EUT leaders; and the importance of on-going, follow-up activities organised by university-based "advisors" in charge of staff development.

One major problem of EUT - as of all other university staff development activities - remains: staff attendance. As the Dean in this case study put it: "...my main disappointment was the fact that so few people turned up to the programme..." Fifteen out of 40 MAS faculty staff (i.e. 37.5%) attended only part of the trial EUT programme, seven attended regularly (i.e. 17.5%). If excellence in university teaching is seen to be rewarded by tenure and promotion in the same way as research publications (and, by the same token, if a lack of teaching ability and skills is regarded as a barrier to tenure or promotion), more university teachers are likely to be motivated to devote time and effort to the improvements of their teaching, and to balance their aspirations and priorities between research and teaching, the two major responsibilities for which academics have been appointed and should be accountable. Given the positive professional attitude already exhibited by many university teachers and the increasing frequency with which teacher evaluation schemes are being established in tertiary institutions, the EUT programme - or other effective staff development activities - may prove to be an essential part of in the professional life of any dynamic institution of the future.

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INNOVATIONS IN DISTANCE LEARNING

THURSDAY, 17 JULY

1600 - 1730

DISTANCE EDUCATION: CLOSING THE GAP

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The American Council on Education's latest directory of accredited external degrees lists one hundred such programs at U.S. institutions in 1984. In 1985, the National Home Study Council had seventy-seven member schools and sixty-six member institutions provided data to the National University Continuing Education Association in response to its 1984 survey of independent study programs. There are also as many as four hundred unaccredited proprietary schools offering correspondence courses and there are countless numbers of Bible study programs offered via the mails. In addition, there are U.S. Military correspondence schools throughout the world with enormous enrollments. The half-dozen U.S. institutions with the highest independent study course enrollments have from 8,000 to 12,000 students, and several distance teaching units at universities outside the U.S. have enormous enrollments of correspondence students, some with forty to sixty thousand students.

Distance learning, distinguished from other educational delivery systems by an arrangement of instructional resources designed to overcome the constraints of time and space, has evolved into a diversity of formats to facilitate independent study. And, although a distinct teaching function is involved, it is decidedly a learner-centered system conducted through printed materials and electronic means. The American Council on Education offers a generally accepted definition of external degree programs as those in which less than twenty-five percent of the work required for degree completion is in the form of classroom-based instruction. Rumble & Harry have identified the main elements of distance education which distinguish it from other non-traditional learning systems. These include: the separation of teacher and learner; the use of media (usually print); the provision of two-way communication between learner and the institution or teacher; the teaching of students as individuals rather than in groups; and an organized instructional delivery system.

Charles Wedermeyer has also examined the independent learning phenomenon and defines it simply as learning activity that occurs without face to face teaching. This distance factor is the primary element that has contributed, in his judgement, to the development of independence in learning, and ultimately to a fundamental change in education - the shift from teaching to learning as the central concern of what has become known as non-traditional education.

Patricia Cross captures the uniqueness and significance of the external degree concept in observing that the "External Degree Program certifies the level of accomplishment regardless of the pathways used to reach it - a quite different concept from that used in certifying the pathways regardless of the final level of accomplishment".

Distance learning has been an international phenomenon for some time, especially in larger countries where geography prevents many citizens from having easy access to universities which are largely confined to major cities. Countries with notable external degree programs include Great Britain, South Africa, Australia, Canada, West Germany and the Soviet Union. Although there are estimates of up to seven million people engaged in some form of independent study in the United States, far less use is made of this method there than in many other countries. Perhaps the most widely known example of a self-contained distance learning unit is the British Open University. Fortunately, the fanfare which heralded its opening in 1971 was followed with enough success (within a decade, it was able to claim some 50,000 graduates) that its skeptics were quieted and other countries followed suit with their own versions.

A 1983 survey on the use of distance learning methods generated replies from 304 institutions in fifty countries (two-thirds in North America and Western Europe). The number of students engaged in distance learning in the programs surveyed totalled 1.9 million (this figure does not include students in the 600 plus institutions with distance learning programs which did not respond). Correspondence is the overwhelmingly predominant method of transmission among the programs surveyed (only about five percent do not use it). In North America, many schools utilize a variety of methods in addition to correspondence (e.g., telephone, regional study centers). Twenty-nine percent use only correspondence, especially programs in Europe. The radio is widely used in many developing countries and audio-cassettes are widely used in Australia/Asia. Twenty-six different languages are used, but English remains the most prevalent, being utilized in two-thirds of the programs surveyed.

To be sure, most external degree programs that have been adopted by colleges and universities in recent years are a far cry from the original correspondence school notion. First-rate faculty, excellent learning materials, sophisticated instructional technology, quality control mechanisms, substantial student services and strong organizational support have all contributed to a recognized and respected means of making educational opportunities more accessible to ambitious adults. And it is this success that encourages new institutions to examine the concept, resulting in the implementation of more programs each year. But despite their growth and significance, Wedemeyer contends that such alternative learning modes have, until recently, remained largely isolated from an indifferent and usually hostile educational establishment. In such an environment, non-traditional efforts have focused on practical, operational issues geared toward survival and have given inadequate attention to theory.

However impressive the number of innovative educational programs which emerged and gained acceptance in the 1960's and 1970's, independent study is still viewed with considerable skepticism and still connotes the image of "diploma-mills" advertised on matchbook covers, and those connected with such efforts continue to be plagued with a second-class status. All too frequently, the harshest criticism comes from colleagues with strong vested interests in established educational systems. Wedermeyer points out that for over seventy-five years correspondence study, as the first method to foster independence in learning, was the only alternative to traditional classroom-based teacher-centered learning, yet it received only scant interest as a learning method within professional education circles. He observes that, after nearly a century, correspondence study is finally beginning to emerge as an important methodology warranting serious attention. He believes that this form of study now has established a more secure identity, and enjoys a recognized relationship with mainstream educational theory and practice.

Although independent study may be seen as a questionable educational format, the auto-didactic mode of learning it represents is, in fact, the most common means adults utilize for acquiring information. Given proper resources (e.g., effective instructional guides, appropriate texts, adequate faculty, communication, and institutional support), distance education is actually an extremely comfortable means of learning for most adults who have been long absent from any formal educational situation. Correspondence study represents the primary system of formal education accessible to all learners - regardless of social, economic and geographical circumstances. Further, it has emerged as a driving force in the direction of independent learning and away from continued dependence on a teacher-centered instruction as the sole means of obtaining an education.

Kaye & Rumble distinguish several distance education models: the first of these is the autonomous distance teaching university established exclusively for external study whereby students use one or more available methods for independent study; the second is the conventional institution with provides external study resources by creating a separate unit, division or school which operates within the existing organizational structure; and the third option is a variant which combines the features of the first and second models by integrating classroom-based instruction with distance teaching elements. New, autonomous and independent structures are generally more advantageous for external students as they are fully dedicated to their particular needs, and are able to integrate all the functions that support teaching-learning activity.

We can identify a number of key attributes which contribute to a high-quality distance education program:

- the program is consistent with the institution's mission;
- needs assessment and planning have been conducted prior to implementation of program;
- a critical mass of students is available to warrant development of a comprehensive program;
- a committment exists at upper levels of the institution to allocate adequate resources for a high quality of effort;
- there are administrators and faculty willing to provide expertise and instruction;
- sufficient flexibility exists to meet student needs without compromising academic rigor.

The cost-effectiveness of the distance education enterprise must eventually be addressed, particularly since skeptics will be quick to point out that most distance teaching institutions are unlikely to be able to produce graduates at costs below those of conventional universities operating within the same economy. (The most critical cost variables are: the media utilized to transmit instructional resources; the number of courses, and the number of students). In general, observe Kaye & Rumble, conventional teaching institutions are cheaper when dealing with a relatively low number of students, while distance teaching systems are more economical if higher number of students are enrolled.

The likelihood of significant increases in distance learning enrollments (particularly in degree programs) within the next few years, as demographic changes in the traditional college-age population reduces on-campus enrollments, will have a profound impact on faculty members' instructional roles. Rather than transmit information in person, many faculty will have to make the adjustment to monitoring and evaluating the work of geographically distant learners. Faculty accustomed to more conventional teaching modes will have to acquire new skills to assume new roles, not only to teach distance learners, but to organize instructional resources suitable in content and format for independent study. A course previously designed for an interactive seminar involving a dozen students known to the faculty member will have to be restructured for use by up to several hundred students who may never meet the instructor or one another, although all will be exposed to the same course material and will complete the same assignments and tests.

The task of the correspondence instructor or mentor, as described by MacKenzie *et al*, is much more than merely grading submitted lessons. Ideally, the instructional process involves:

- discerning the student's earnestness;
- assessing student progress toward objectives sought;
- recognizing and discovering students' learning difficulties;
- providing necessary guidance for overcoming obstacles;
- stimulating and challenging students to further efforts;
- evaluating the quality of students' learning;
- assigning a grade to estimate learning progress

Distance education revolves around a learner-centered system with teaching activity focused on facilitating learning. The teacher augments the prepared study guide by providing explanations, references and reinforcement for what the student has been exposed to. Independent study stresses learning, rather than teaching, and is based on the principle that the key to learning is what students do, not what teachers do. It is a highly personalized process which converts newly acquired information into insights and ideas. The task of faculty is to facilitate and enhance that process to achieve optimum learning outcomes. Ultimately, it is the opportunity for active participation, with benefit of professional development and support, that is the key factor in promoting faculty receptivity toward, and significant contributions to, adult degree programs. The myth that there is a minimal need for strong faculty in such programs must be dispelled for it is precisely in the design and delivery of these new learning modes where the input of competent and committed instructors is most critical.

Despite frequently cited shortcomings in the method, correspondence instruction does have a number of convincing features not readily available to the learner through other modes. It permits the student to meet his learning needs at his own pace, choosing his own time and place to study. The method is easily adaptable for use with other instructional systems; it is well suited to the psychological needs of apprehensive students fearing failure and embarrassment; and the specificity of course objectives and sequencing of material forces the student to clarify his/her thinking and develop academic rigor through the necessity of putting answers in writing for evaluation by the instructor. To date, no studies of achievement show that correspondence students do less well than do classroom students, although some research indicates that independent learners do well or better than those who rely solely on oral instruction.

There are both positive and negative variables affecting students' likelihood of satisfactorily pursuing independent study work. Among the driving forces:

- desire to complete a degree for promotion, salary increase;
- satisfaction/prestige of obtaining a college degree;
- interest in material being studied;
- employer willing to provide tuition reimbursement,
- spouse, family members are supportive

Restraining forces include:

- many credits still needed to receive degree;
- pressing family obligations or disapproval;
- certain required courses very difficult;
- instructor/tutor does not seem helpful;
- demanding job leaves little time for study

While these factors can be formidable in hindering student progress, there are several key areas in which the institution can have a significant impact on the immediate satisfaction and ultimate success of independent study students. The most critical aspects of institutional activity are frequency of student contact; accuracy of information given; usefulness of academic advising; adequacy of support offered; reliability of record-keeping systems; and rapidity of paper-flow procedures.

The distance learner is typically between 30 and 40 years old with some previous college education, who now seeks a baccalaureate degree or some other credential perceived to be beneficial in achieving further career-related goals. Those with between nine and fifteen years of education are most likely to seek correspondence education. For the most part, distance learning programs do not attract marginal students with a high incidence of past academic failures. These programs appeal to ambitious adults who, for a variety of non-academic reasons, were not able to complete a degree previously begun, and who are now seeking a means to do so through a flexible, part-time arrangement while maintaining their work schedule and without abandoning their families and other obligations.

Distance learners can only function effectively if they are challenged and provided the guidance to acquire the basic tools of learning: identify needs, set goals, seek resources and assess progress. If they are not equipped to be self-motivated, curious and persistent, they remain continually dependent on prodding from external forces. It is this combination of personal factors, environmental conditions and institutional support which influence the level of productivity and the means by which a student actually accomplishes learning goals.

What, then, are the essential conditions for distance learning programs to operate successfully in varied social-political-geographical settings? Kinsella identifies several key elements which should be in place prior to launching such efforts:

- a common language of instruction;
- a reasonably high rate of literacy;
- an established postal delivery and/or radio transmittal system;
- personnel with knowledge of the area and people;
- self-contained study materials;
- curricula relevant to daily life;
- availability of audio-visual materials

A good independent study course assists the user, having reflected on acquired knowledge, to proceed to the next stage of utilizing it. Students need the opportunity to synthesize and apply the information they have mastered. If independent study arrangements do not develop in its participants the capacity to carry-on self-directed learning, then this particular method has failed to meet the basic goal of producing a truly educated person able to function effectively in his or her respective environment.

Printed material persists as the most common medium for distance learning. It is relatively inexpensive, is portable, is re-usable and can be easily integrated with other learning modes. Further, most learners can quickly acclimate themselves to printed materials as it is the most familiar method for learning to which all have had some exposure through previous learning. While print materials will likely remain as a basic resource for independent study, it may well be that new means of instructional delivery will render the transfer of materials via the mails increasingly obsolete. There are discernable trends currently taking place in media usage for distance learning applications. In general, there is a noticable decrease in broadcast media and an increase in interactive media, most noticeably the more frequent use of multiple media, rather than a single mode of delivery.

These emerging delivery systems requiring the purchase of equipment in order for students to learn at home have implications for educational equity. If the rationale for distance learning is to increase access to educational opportunity for greater numbers without time and place constraints, yet at the same time requiring home-based learning aids well above the typical cost of books and other printed materials, then there is the distinct possibility that technologically-assisted learning may be limited to the more affluent learners of a society. Still another fundamental question must be raised in this context; can independent learners fully develop the skills necessary for learning without face-to-face interaction with a teacher? If direct experience, augmented by lectures, discussion and peer interaction is important for learning, can the independent study environment provide the necessary conditions for the learning process to thrive? A related issue concerning human development must also be addressed: if face-to-face classroom encounters are increasingly replaced by tutors and students pursuing their respective roles at a distance, if instructors are steadily replaced by machines, and if learners work in isolation from one another, then the affective skills largely developed through human interaction may, in large measure, be lost.

Nevertheless, some observers see distance education as a key to democratization through enlargement of opportunity to new target populations previously underserved due to geographic isolation. The design and delivery of courses suitable to the specific needs of particular populations is seen as crucial to sustain whatever level of literacy developing countries have achieved. To many observers, the acquisition of independent learning skills represents significant movement away from the social control that permeates many societies, thereby enhancing individual capacity for self-help. Once established, distance education programs can have a significant impact in ameliorating social problems and stimulating change in developing countries. Obviously, such efforts are unlikely to emerge as panaceas for fully resolving major national problems, but they do contribute to individual advancement and social goals.

Others, however, suggest that distance learning systems, if linked with effective mass media, could become powerful tools to teach people what to think rather than develop cognitive skills for greater self-sufficiency. Indeed, it might be argued that home-based education, far from being a means for addressing the cause of emerging peoples in developing nations, is a device for keeping populations dispersed and de-politicized. Whichever view is taken, distance learning, though a highly individual activity, is potentially a pervasive social phenomenon.

Today, despite the presence of distance learning programs in diverse forms in many nations, their proliferation has not led to the establishment of any recognized body promulgating acceptable criteria for what constitutes a credible external education program. Nor is there any identifiable source of expertise upon which institutional planners and decision-makers may rely for guidance. As a profession, correspondence education has not yet been clearly defined and established. Educators are not likely to consciously plan a career as teachers or administrators within distance learning programs. Additional job opportunities and professional development are essential if this is to become a recognized field with expertise that is valued and accomplishments that are rewarded. Distance educators must establish linkages with corporate, political, social and educational sectors and increase others awareness of the philosophy, methods and efficacy of distance learning.

But it is unlikely that significant gains in this direction will occur until: a comprehensive theory of distance learning is established through increased research efforts, both applied and theoretical; and until their exists greater institutional collaboration among those planning or engaged in distance education, especially in the production of course materials, professional development, research and evaluation. Substantive analysis of methods and sharing of experiences is needed to identify the essential elements of distance learning, to clarify practices and document outcomes. There is a need for the creation of national and international organizations that can generate adequate resources aimed at promoting and perfecting distance learning techniques, with particular emphasis on developing regions.

Thousands of adults worldwide have already been served for many decades through distance education programs. But there are countless others who could also benefit from such efforts, and it is the further growth and systematic development of external education programs that will meet the need. This goal can best be achieved if external education is strengthened through a more distinct identity within higher education, and if those now engaged in this important work are able to establish principles of good practice through increased collaboration, advocacy and articulation of their accomplishments. It is not entirely clear just how much growth can be anticipated in the adult/continuing education sector over the decade and a half remaining in this century, but it is clear that independent study, especially the external degree format, is now in a period of sustained growth. Certainly, external degree programs cannot be dismissed as a temporary innovation, likened to many alternative post-secondary efforts of the 1960's and 1970's which no longer remain.

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PROLOGUE; A LIBERAL ARTS SKILL DEVELOPMENT PROGRAM FOR CAREER-CENTERED, ADULT DISTANCE LEARNERS

LeGrace G. Benson

Empire State College/ Center for Distance Learning

I. Background

The Center for Distance Learning (State University of New York-Empire State College) was founded in 1981 to serve students who for such reasons as work schedules, geographical remoteness, handicapping conditions or preferred style of learning could benefit from a structured program of tutor-assisted independent study. Five hundred thirty-five students are currently enrolled from twenty states and several overseas locations.

The primary media of instruction are print materials, instructional letters, and tutorial telephone calls. Audio tapes, radio and video are used on a regular basis but are not primary, in part due to the esigencies of commercial broadcast law and practice in the United States. Initially modeled in part after the British Open University, the Center for Distance Learning has rapidly developed its own materials and pedagogy.

The PROLOGUE project team is comprised of permanent, core faculty of the Center who have been with Empire State College for at least seven years. Most have also served as administrators with the College. Each holds a Ph.D in a different discipline: sociology, economics education, history, business, chemistry, and visual perception/ art history). Each has participated in the College's continuous program of faculty development, strongly concentrated on design, implementation and evaluation of methods and materials for adult students matriculated in individualized associate and baccalaureate degree programs.

As one consequence of this focus, faculty are current with the literature of adult development theory and practice, especially as related to educational and intellectual development. Furthermore, since all faculty engage daily in assisting students with career and educational planning, each has acquired ample theoretical and practical knowledge of the most current and most useful materials and activities in this aspect of adult degree planning. Center for Distance Learning faculty are additionally well-informed about and contribute to a growing body of international print and conference communications concerning distance pedagogy. (Bibliograpy is available but contians not items directly relevant to this unique project.)

Cooperation on the PROLOGUE project across disciplines and administrative units is extensive. The project team has full access to studies and experience from all other Centers of the College, especially benefiting from consultations with the College-wide Sepcial Committee on Basic Skills and with faculty directing demonstration programs in writing; science and mathematics; and educational planning. The Empire

State College Office of Research and Evaluation, currently cooperating in a six-college, educational value-added project with American College Testing Program, provides information gained from that project, as well as from data gathered from evaluations of other programs in the College.

II. Need for the project

The intellectual and social ecology of the adult distance student is much different from that of the young adult who arrives on campus each September. The adult is more urgently concerned about the directions and tasks for becoming; more conscious of the particularities of being; more elaborately related to place, time, work, and other people.

Their ecology of personality, intellectual development, and abilities is intricate. Many have prior campus-based college experience, and some have already completed one baccalaureate degree. Nearly all hold jobs, often at responsible, supervisory levels. Almost without exception, they have realized some of the successes in work, family and community most adults expect. The successes are the "peaks" in these personal landscapes; adults usually elect to matriculate because of the "valleys--" the lack of knowledge and skills perceived to be a barrier to further progress.

An example: Abner, Mayor of a city of 30,000, has a phenomenal grasp and recall of data presented to him in oral reports, is articulate in meetings, and facile with reporters. However, he has serious difficulty reading a textbook on government policy making, and is anguished at his inability to write even the simplest letter or memo. Another example: Margot has a degree in English literature, but wants a business administration degree. Mystified by most graphs, tables or formulas, she cannot succeed in the necessary statistical studies until she has re-mastered high-school mathematics unused since 1960.

Such students present complicated profiles of peaks and valleys not easily described or evaluated by commercially available standardized tests, which for the most part have been designed to measure academic achievements of a population of school-age youths, not a working adult's learning. Computer-based, branch-program, descriptive tests are currently under development at Educational Testing Service; but these require access to programs and computers that cannot yet be arranged for distance learners. Observations from the College participation in the American College Testing Program value-added efforts also identified another problem: some adult students find testing --particularly in batteries -- distasteful and even threatening.

The low spots in the achievement profiles do not appear to be really amenable to instruction offered in pre-college level courses designed to teach basic academic skills. Adults have one eye on the budget and prefer not to spend tutition money or grants on non-credit work; they resist spending time on studies not clearly related to career goals and degree completion; the language and much of the topical content of such courses is incompatible with their typically more highly developed speaking vocabularies and with adult life styles. Moreover, we are finding that adult skill and knowledge lacks are apt to be more highly particularized and sharply focused than the remedial courses.

Whatever the nature of the gaps in knowledge or skill, they are barriers to academic progress, as is reflected in first and second term attritions. Employing individual advisement and instruction by letter and telephone and experiencing a degree of success in assisting students to overcome initial handicaps, we perceived an additional need (1) to create more detailed and systematic ways to assess and diagnose each student's profile of educational needs and aspirations early in the first term; (2) to inform faculty in all courses about the profiles of their students, especially in areas of greatest need; (3) to integrate the assessment and instruction into the four-credit educational planning course all students take, and to include instruction and practice in student self-assessment and evaluational procedures; (4) to integrate several types of basic skills instruction into all courses including advanced studies; and (5) to track each student's progress in the development of certain selected skills across the entire range of studies in which he or she enrolls.

The plan, called PROLOGUE, had to be formulated with full cognizance of adult psychology and life circumstances, and of the characteristic opportunities and limitations of the distance learning mode. The entire faculty, including all part-time adjuncts and tutors participated in creating, using and evaluation the plan; and PROLOGUE was multi- and cross-disciplinary for both students and faculty.

An Improvement of Undergraduate Instruction grant from the State University of New York Research Foundation enabled us to fund the project from May, 1985 through May, 1986. The results to date are described in the next sections.

III. Project activities

The plan involves five major activities on the part of the faculty: (1) identifying the broad areas of most common academic needs for our particular population; (2) designing instruments for describing each student's profile of strengths and weaknesses (3) formulating the means by which developmental skills instruction is integrated into the several studies in which a student is enrolled; (4) devising a mode for tracking each skill development across courses; (5) initiating systematic follow-up, including assignments and instruction in the targeted areas.

1. In the initial phase of the project, faculty, including tutors and adjuncts, identified and analysed the skills and knowledge needed for sucessful start and completion of each distance course. Simultaneously, faculty analysed papers received and the tutoral phone calls to identify particular areas of individual skill and information whether lacking or well-developed. Data collated from papers and phone calls confirmed common wisdom about typical weaknesses: grammar, spelling, composition and rhetoric in speech and writing; critical reading and reasoning; accurate observation and reporting; identifcation and effective use of information sources; clarification of goals and gathering data relevant to specific decisions; use of effective, realistic techniques of self-evaluation; familiarity with mathematical concepts and procedures needed in the student's chosen profession; acquaintance with national, and international history; and a knowledge of cultures and ethnic groups other than the student's own. To this familiar list, and at the top of it, we discovered that we had to add three essentials: effective planning and use of time; development and confirmation of self-confidence; and an ability to be attentive and concentrated.

2. During the second phase of the project, the faculty team created two types of assessment and evaluation instruments which avoided students' aversion to standardized testing by being informal and integrated into normal distance learning instruction and advisement.

one set of assessments took the form of an exchange of letters between advisor and student, the other set was incorporated into a workbook accompanying a newly-designed educational planning course.

The letters, which request letters in response, are sent to the student at the beginning, mid-point and near the end of the first term. The students' letters provide a realistic, highly informative writing sample. In the first term of use, an outside expert analysed the first set of letters; his findings confirmed what faculty had themselves diagnosed. No return letters showed difficulties severe enough to require pre-college level instruction, but all yielded information about aspects of writing to be improved. The second letter engaged the student in a search for all locally available information resources, hence not only provided another writing sample, but informed the advisor of the student's knowledge and use of libraries, archives, collections, and information networks. The third letter engaged the student in observation and reporting. The exchange of letters takes place between student and the advisor who is tutoring the educational planning course, thus assuring both an immediate instructional follow-up and informed selection of courses in future terms.

The second set of instruments is incorporated into the new Educational Planning course Workbook, and provides opportunities and instruction for self-assessment and evaluation in each of the academic skills areas faculty identified in phase one. Given the great latitude of student backgrounds, there are many optional tasks. Students do the *Workbook* tasks independently, but most are also sent to the faculty advisor/tutor for review. The pilot-use of these tasks is yielding information for revision and refinement. Faculty are discovering that that the tasks are more apt to be completed when a student views them as an integral part of the personal educational and career planning. At this stage of our efforts, it is obvious that the design and integration of additional accurate, refined assessment and evaluation instruments into the *Workbook* is crucially important to the success of the PROLOGUE program effort.

3. The third phase of PROLOGUE, that of integrating the needed basic skills instruction into regular course work, has now begun and takes three directions: (1) Some students are advised by their Mentors to enroll in introductory or intermediate courses largely devoted to the area of need and/or strong interest, typically one of several courses in written communications, critical reasoning or mathematics. This is the simplest and most traditional direction. (2) Tutors are notified of all students' developmental needs or interests, and are requested to create or modify course assignments accordingly. Faculty have been creative in meeting this request. When a student is taking two or more courses, this automatically insures integration of the fundamental skill and knowledge acquisition across disciplines. (3) Where there are problems not easily incorporated into the structure of the courses, a student can concurrently receive non-credit tutorial assistance outside the course. In the near future, students will be able to do such work independently, using single-focus instructional modules now under development.

These will include means of self-evaluation and evaluation by tutors.

4. Tracking each student's progress across all courses is now easily accomplished with computer records. Dr. Thomas Dehner of the project team created a program which enables each advisor to follow individual aspects of academic development from matriculation to graduation or withdrawal. The results of this fine-tracking are promising.

5. The initial experience of faculty with systematic identification, integration, tracking and follow-up of skill needs is positive. There is more orderly and complete information about each student. Faculty have greater confidence in providing more detailed, more informed instruction and advisement. Several faculty have redesigned regular course assignments to provide instruction more closely tied to the fundamental academic development areas of primary importance. The Center as a whole is now reviewing assignments in all courses to see where and how to integrate developmental sequences up through advanced levels. New courses at all levels and divisions of the curriculum will include such assignments, coordinated for maximum effectiveness.

Conclusion

The integration of the assessment of knowledge and skills into the advisement and instructional process within the context of developing a career and educational plan is apparently viewed by students (based upon reponses to date) as a non-ego-threatening, practical assistance, of immediate usefulness as well as longer-term value. We believe that this perception is enhanced by the students' simultaneously discovering strengths as well as lacks, and by receiving strong confirmations and well-targeted instructional assistance in the individual advisement and tutorial process.

EDUCATIONAL DIALOGUE ABOVE THE ARCTIC CIRCLE
AN EXPERIMENT IN NON-TRADITIONAL COURSE DELIVERY

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Historically, there has been little quality commitment from educators to non-traditional students in Alaska, particularly those students of higher education. By non-traditional, I mean, older students, minority students, students who are married with children, and other college students who are not the traditional recent high school graduates who live on-campus. However, in the last twenty years, there have been experimental programs designed for specific categories of non-traditional students. There have been a plethora of televised educational programs geared from primary school level like the famed Sesame Street, to college level courses such as Earth, Sea & Sky and Brain, Mind & Behavior. The fact that alternatives exist, though, is not simply the answer to questions of equity and quality in education.

Quality education is a transactional process, a dialogue, a series of interactions between people discussing a particular subject. Educational television, while it has proved accessible in many situations, is quite comparable to Paulo Freire's "banking" notion of education where students receive, file, and store deposits of information. The more students, as Freire indicates,

> ...accept the passive role imposed on them, the more they tend simply to adapt to the world as it is and to the fragmented view of reality deposited on them. (1970:60)

As an alternative to this passivity, Freire goes on to describe what he calls, "problem-posing education" as a dialogical and student, and of equal importance, dialogues between students. When this necessary element of dialogue is omitted from the learning situation, as it is with instructional television, students fail to develop that critical awareness which enables them to be participants in their world. Britain's Open University, perhaps the most noted developer of educational television, has incorporated local study centres as an essential supplement to encourage this type of diaglogue. Likewise, the state of Alaska has made provisions for this aspect of learning. In the spring of 1981, the State Department of Education and the University of Alaska entered into a cooperative agreement which resulted in a statewide educational television system, Learn/Alaska, and a statewide telephone audio-conferencing network which allows students, fellow students, and instructors to interact verbally with one another; the only limit to participation is the breadth of the satellite signal. Professors and students from any University in the U.S. may join the conference, and in fact, nationally known authors and Alaskan political leaders have participated in discussions with learners all over Alaska. This audio-conferencing network, together with the already established University of Alaska computer network, is the foundation of course and program delivery for Chukchi Community College. In an area approximately 200 miles from Siberia and where many people still hunt whales, seals, and caribou, this innovative educational program serves ten villages dotted along two rivers and the coast of northwest Alaska.

Kotzebue, where the college is located, is the hub city for this region the size of Indiana. There are no roads connecting Kotzebue to the ten villages where the students, of which 85% are Inupiaq Eskimo, live. Many of these students live subsistence lifestyles and may never have been outside this region. Yet, cable TV and modern technology have found their way into the arctic and are nudging the people into a modern world where cash is significant to their survival. Expressly created to experiment with non-traditional distance delivery techniques, Chukchi plays an integral role in establishing a bridge between the old lifestyle and the new. People in this region may attend the first two years of college directly from their home village and transfer to either a four year institution or continue in one of three distance based program areas from the University of Alaska, Fairbanks. The Eskimo society of which I have been a part, and of which is described in the following pages, has contributed to the extrapolation of my personal values and biases about education. While it is difficult, if not impossible, to be completely objective in my perceptions, I have tried to acknowledge my biases and to describe, as honestly and clearly as I can, our educational system.

Before I begin my description of the history of education in this area of Alaska, I must provide some of my own history which led to my employment at Chukchi and which has colored my perceptions of the educational situation. In 1979, I found myself a secretary because of the scarcity of teaching positions. However, good fate found me working for an innovative University of Alaska dean. Committed to outreach, he started a pilot program at the local prison. Designed to address both rehabilitation and employability, it was a program which focused on visual, literary, and dramatic arts and which was supplemented with adult education, business administration, and computer programming. Knowing my desire to teach, he gradually phased me in as a developmental reading and writing instructor. The success of the pilot program was notable, so we were contracted to develop a state-wide prison education program which would come to be known as the University Within Walls-Alaska (UWW). Obviously, the inmate students were unable to come to the University, so we brought the University to them. At the program's peak, we had created an electronic linkup between all ten prisons throughout the state with a combination of the state audio-conferencing network and the University's computer network. Within the University system, we were forerunners in non-traditional approaches to education. UWW was equally non-traditional with regard to its philosophy which was based on a deep commitment to equity and moral development among both students and teachers, and a commitment to a perception of the world which took into account issues of social class and surplus population. It is with these predilections that I came to Chukchi Community College, committed to non-traditional students, and to non-traditional delivery as a means to allow these and to non-traditional delivery as a means to allow these students the equal opportunity for personal success and fulfillment.

* * *

It was a dark afternoon in mid November of 1982 when I landed in Kotzebue, 33 miles above the arctic circle. The name seemed strange for an Eskimo town; it was named for the German explorer, Otto Von Kotzebue, who sailed for the Russian Navy. As we came through the clouds I could see the vast expanse of ice and snow, void of trees; I imagined it something of an ice desert. As the plane neared the ground, I noticed the hazy blush of sunset on the horizon. This is a land where the autumn sun sets at 3:30 in the afternoon. Banking left in preparation for landing, I caught my first close-up glimpse of about a thousand tiny, matchbox houses clustered atop a sheet of white. The plane bounced on the icy runway, and I felt the permanence of my future just as sure as the ground below me. For the first time in my life, I felt proud for to be on my own, and to be doing something that seemed important.

As I stepped down from the plane, I felt a dry blast of wind hit my face warning me that this was nothing like my channel home in Southeast Alaska warmed by Japanese currents. I pushed my way through the door of the terminal building and studied the crowd as they filled the narrow lobby. Some were dressed in the bright red and blue down-filled parkas like the one I had purchased at

Eddie Bauer's in Seattle; others were clad in wolverine and muskrat lined calico parkas made by the hands of Eskimo women. Eagerly and desperately I searched for the only face I might recognize, Sam Towarak, the president of Chukchi Community College. He stood smiling by the ticket counter. We pushed our way not more than twenty feet to claim my baggage and then not more than thirty feet more to the truck, exhaust steaming in the autumn, zero-degree cold. We drove along the frozen shorefront on streets of wind-polished snow. We passed the Nu-luk-Vik Hotel which is owned and operated by the Northwest Alaska Native Association (NANA) Corporation. Further down the street we passed the Eskimo Building, which Sam told me housed Maniilaq Association, the non-profit human service organization for the NANA Region. We finished the complete tour of the town in about twenty minutes and ended at the college where I met my new colleagues. I was terribly excited as we briefly discussed our plans for the coming year. Because of my anticipation of the new work and the experiences ahead of me, sleep did not come easy that first night in my hotel room, yet, I looked forward to my new future in the far north.

In its previous two-year history, Chukchi Community College had served the community of Kotzebue. However, with its new distance delivery mission, Chukchi's community now stretched across many miles with many different needs within each village community. As a team of both teachers and administrators, we met with the local people from each village to design together a program which would suit the career desires, the traditional seasons, and the native values of the culture. Our task was a difficult one; to create a college which would respond to a variety of needs and which would preserve the fundamental values of this society was difficult enough, and yet, somehow the program still had to be cost-effective. Generally, it is the non-traditional programs which are the first "fat" to be pared away in institutional budget cutting. However more complex than funding security, was the task of designing a curriculum which would respond to the cultural Inupiat values and yet provide the necessary connections to the values tied to both academic and western societies. We were all too aware of the historical tradition of education in Alaska, and many times I felt as if all Chukchi, like the missionaries, did was to overlay solutions like topical medicines applied to the systemic problems of western education with little or no curative effect.

It was in the late 19th century when missionaries first arrived to this region of Alaska and began to take not only the responsibility for Christian training, but the responsibility for some of the formal education as well. The native people were inculcated with the Judeao-Christian values and perceptions of the rapidly encroaching modern society which was reshaping their lives. In 1896, the missionary schools began to be replaced by federal schools. By 1931, the Bureau of Indian Affairs (BIA) had been assigned full responsibility for native education; non-native children attended local territorial schools.

Depending upon the particular area and the agreement of the government, native children from kindergarten to twelfth grade were sent away from their families to either Federal or missionary boarding schools. Some children were sent even as far as Arizona and Oklahoma. By the time these children graduated from high school, most had accepted their Anglicized names, the Christian faith, and the language of the western world. Then in 1975, because of the legal case commonly referred to as the "Molly Hootch case", native families, now free from discrimination, were given their choice of whether to send their children to a BIA school, a mission school, or a State school. By 1976, the state had provided funding to build new rural schools in many of the villages in western Alaska. However, until 1981 with the development of the distance delivery system, higher education institutions had made few attempts to provide for these rural, indigenous people.

The Indo-European culture and its values have interrupted the traditional subsistence lifestyle, and as these values prevail, stealing into the school even from well meaning teachers, they encourage the younger generation to desire material wealth, to compete with one another, and gradually to increase their dependence upon the cash economy. Traditionally, the determinants for "success" were reinforced through living off of the land and sharing its bounty with others. Today, success is measured by a college degree, a large paycheck, or a prestigious job. Because today, those who choose to subsist must compete with the high tech, week-end hunter who uses snowmachines, rifles, and occasionally airplanes, the traditional hunter is forced into a cash economy simply to maintain parity with his modern counter part. And it is this competition that fundamentally hinders many natives from developing to their fullest potential in the modern society.

Now is where Chukchi Community College can break the pattern of the paternalistic education of the past. The wife of a hunter in the village of Noorvik now may participate in college classes without leaving her home, and in fact, graduate with an education degree and still help her husband tend his dogs, tan caribou hides, and sew their mukluks and parkas. People of this Region may choose to pursue a traditional discipline to prepare for modern jobs, such as teachers, business entrepreneurs, and social service professionals, which have been filled traditionally by non-native outsiders. These are the Inupiat of the twentieth century who create their identities from their cultural heritage and likewise create their sense of dignity from the modern world of work. Identities that are defined through "dialogues" about our changing world are ones in which the emphasis is placed on the 'sharing' of knowledge, not the 'acquiring' of the instructor's knowledge -- the "banking concept". Students "develop the critical consciousness which ... results from their intervention in the world as transformers of that world (Freire:1970:60). Dialogues, whether shared verbally over audio-conferencing or learners who respect one another and share their knowledge. It is this kind of community in life, and in the classroom, that fosters maturity, and creates a powerful person who understands herself and her world, and who will have the ability to, as one Eskimo elder so perfectly said it, "walk in two worlds with one spirit." (Ontooguk:1982).

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LEARNING EFFICIENCY AND USE OF VIDEOTAPES
IN UNIVERSITY LEVEL DISTANCE EDUCATION

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1. Institutional Conditions

From the beginning the "Fernuniversität Hagen" has decided to produce audiovisuals by means of videotapes. Co-operation with public broadcasting with own transmissions conducted by the Fernuniversität have been unsuccessful so far.

By far the most important source of videotapes are productions produced at the ZFE (Centre for Distance Study Development) by our own personell.

Cameras are directed by students, having part-time jobs for a couple of years while studying at other universities. The number of tapes currently produced is rather small due of this unprofessional manner to produce instructional films.

2. The design of videotapes in teaching economics

Main emphasis has been put on the presentation of abstract and complicated economic problems mostly within a mathematical framework. This emphasis may not correspond to the general view, people have about the abilities of video towards illuminating any scientific concept. But our incentive to produce videofilms in economics was not the question, what could be better demonstrated by a film than by a written correspondence text. We knew from our course evaluations that students had major difficulties to understand the abstract and mathematical reasoning in economics.The correspondence text alone seemed to be sometimes not sufficient to help the students to understand the economic problems.
Our videotypes can be borrowed directly by students if they have videoplayers or they can make use of the video players installed at the forty regionally distributed study centres.

3. Learning efficiency of videotapes relative to printed material

3.1 Construction of alternatives

After developing a somewhat sound concept how to produce instructional tapes and where to put our main emphasis with regard to the contents of the tapes the next step was to do some research on the learning efficiency of our design.

A most relevant alternative to teach concepts at a distance by videotaped instruction was of course the existing print material, perhaps ameliorated by didactical and typographical considerations.

Other meaningful alternatives, as a combination of audiocassettes with print materials were not investigated. We did not expect very far reaching constributions of this type of media to the discussion of more formal economic problems than with the traditional correspondence text. But I should admit, that we also have not yet tried out those combinations sufficiently. Though I hope that we soon will have some pilot productions in this field as well.

In 1980 I have started some experiments with course materials of our correspondence course on econometrics. As a topic for detailed analysis I have chosen a chapter on dynamic multipliers in econometric models. This topic seemed to be well suited to our purpose, because

- it contains a narrowly defined concept
- the understanding of the concept proved difficult to many students according to results of our course evaluation
- the concept could be regarded to be quite representative to other economic concepts formulated in a mathematical framework.

The respective chapter of the correspondence text contained 25 pages. We first developed a detailed list to describe the learning objectives of the text and discussed them with the author of the unit. Then we elaborated an alternative version of the text with special regard to didactic principles and of typographic means to underline the structure of the written text.

As a third alternative to the original correspondence text we produced a videotape. This tape tries to present the concept of dynamic multipliers in a manner which uses the specifics of video. We tried to attain comparability of the different alternatives by orientation to the common detailed list of learning objectives.

We did not follow current practice to use identical text to compare print with audiovisual media.

A narrow interpretation of the homogeneity of content neglects the interdependencies of form and contence. The same is true, if alternative designs of print media are to be compared. Marginal variation of only a single parameter may allow for better indentification of the relevant causation, but it often produces insignificant results. Furthermore it does not correspond to our current practical needs, where normally a complex bundle of measures is used to optimize learning performance of media.

3.2 Measuring learning efficiency

As a first step we compared the alternative printed versions. To identify learning efficiency we used three different measures

- subjective ratings of students
- time needed to work through the text
- scores of cognitive tests.

We conducted our experiments not as a field experiment but as controlled and supervised experiment. This led to the disadvantage to have only a small number of students participating. But we expected to receive more reliable results because the outcomes would not be affected by the number of questionnaires or assessment papers sent back to us.

3.3 Comparison of alternative print material

The results of the first experiment indicated that the correspondence text optimized under didactical and typographical considerations turned out to be superior to the original text version with respect to all three indicators of learning efficiency: subjective ratings, amount of time and comprehension test scores.

3.4 Comparison of videotaped instructions vs. printed instructions

3.4.1 Videotapes substituting print material

Within a second experiment we added a third group, which was instructed soleley by videotape. The resulting test scores of the video group were not as good as the results of the group with the alternative version but comparable to those of the group with the original text.

The most interesting fact with the video group was that - due to a fixed running time of the tape - the total amount of time to learn the concept was about half of the amount that the groups needed. which were working with print material.

Our first tentative conclusions about the learning efficiency of video were as follows

- economic concepts formulated in a mathematical framework can be learned also by video taped instruction
- when video is used instead of print material, we cannot expect higher test scores. But the amount of time needed to understand a given concept may be shorter due to simultaneous viewing and listening and also due to the use of animation.

With these results in mind, we have started further experimental work to find out the effects of video when it is used only in addition to the instruction by correspondence text.

This is also the way video is implemented to our distance education system so far at Fernuniversität Hagen.

3.4.2 Video as an additional learning aid

3.4.2.1 Hypothesises and experimental design

We had the following hypothesises in mind when we tested video this time

- if video is used as a supplement to the written correspondence text higher test scores can be achieved than without video (H. Ruprecht 1970, p. 54).
- if we use video in advance to print instructions, students may save some time during their successive study of the print material (G.L. Gropper 1966, p. 37-69).
- if we use video successive to print instructions, we can expect only better test scores, similar to the scores obtained by video used as a somewhat advance organizer.

We formed 5 groups with about 18 students each randomly assigned to the groups. The groups should use the following materials:

1. original correspondence text alone (group O)
2. alternative version of the written text (optimized relative to some didactical and typographical considerations) (group A)
3. videotaped instruction succeeded by instruction through text A (group VA)
4. instruction by text A first, then followed by videotaped instruction (group AV)
5. videotaped instruction succeeded by instruction through text O (group VO).

This test design should point out the influence of supplementary audio visuals relative to pure instruction through the correspondence text. We expected also some hints, whether videotapes of the type chosen are better to be used as advanced organizer or as a repetition and enrichment of the correspondence text already studied beforehand.

Unfortunately we had to mix students enrolled at the Fernuniversität with students of other universities, because of the small number of students studying econometrics or statistics who would be willing to participate at our experiments. The experiments were further limited by the fact, that not enough rooms with video recording facilities were available, so that fast learning students had to wait for the others to continue in the program.

To summarize, the conditions of our experiments were far from being optimal. Nevertheless we received at least some slight support for most of our hypothesises, while some results found earlier, were not continued this time.

3.4.2.2 The results

Test scores received by the groups with additional video indicate, that the video instruction added to their performance. But the expected economies in time needed to understand the concepts seemed not to be less in video groups than in the other groups.

We have tried to analyze therefore the last point in some more detail. As working with the part on preknowledge showed, groups were quite different in their learning behavior.

We will now analyze the effect of video instruction by comparing only groups VO and VA with the group O and A. We tried to measure the learning progress by the percentage of pretest scores relative to the maximum of scores available compared to the same figures in the main test. The formula was

$$LP_j = \frac{1}{n}\sum_{i=1}^{n}\left(\frac{h_{ij}}{h_{max}} - \frac{v_{ij}}{v_{max}}\right).100$$

With LP_j = learning progress in group j
v_i = pretest scores of student i
v_{max} = maximum of pretest scores available
h_i = main test scores of student i
h_{max} = maximum of main test scores available
n = number of students in group j

LP in %	
VO and VA	O and A
+ 3, 51 n = 24	-12, 78 n = 27

Whereas students in video groups attained higher test scores in the main test groups working on printed instruction alone received lower results than in the pretests.

If we split students into two groups according to their pretest performance, we can see that students with higher test scores profited relatively more from audio visual instruction than did students with low pretest scores.

	LP in %	
	low pretest scores	high pretest scores
VO, VA	5, 33	0, 47
O, A	-1, 88	-21, 50

Now we will investigate the amount of time needed for the same groups. If we compare only individual differences between the amount of time needed to study preknowledge text relative to the main text we can state a slight advantage on the side of video groups, though the effect is rather small. If we divide students according to pretest scores we found that students saved relatively more time by additional video when they had high pretest scores.

Before some rough conclusions will be drawn I would like to report some results concerning the general performance of the test groups. We found that individual scores achieved in the main test were slightly correlated with scores in the pretest. That means only that performance of students was not completely altered in the main test (R = 0,537).

There was no correlation between time needed to study the pretext and test scores achieved in the main test. Earlier experiments resulted at a negative correlation. The two components of learning, time spent and test scores, seemed to be quite independent of each other. Students with high test scores are not always studying faster, whereas students with lower test scores sometimes try to compensate by spending more time on the text, sometimes they are more or less giving up.

3.5 Conclusions concerning learning through vidotapes

Still the most important medium to instruct students in distance education is the correspondence text. Often a lot of possibilities exist to optimize learning with printed media. If those opportunities are used better results and a lesser amount of study time can be expected. But a lot of learning problems may need further effort from the distance educator.

The advantage of video taped instruction lies in the fact that learning through video allows for simultaneous viewing and listening and thus faster learning. If video is used only as a supplementary learning aid, advantages in time savings may largely vanish but still better test results are achievable. If time savings are important, supplementary video instructions should be viewed before studying the correspondence text.

4. Learning efficiency of televised instruction relative to face to face tuition

In correspondence education face to face tuition is not at the core of distance teaching. Main emphasis is put on non personal media. Therefore the amount of direct teaching will always be limited in this type of educational system.
However nearly any correspondence education contains elements of direct teaching as well so that the discussion of alternative use of media should not be restricted to substitution or complementarity effects between print and audiovisual media.
Several studies have compared films or videotaped lectures with live lectures. Mostly no considerable loss in cognitive test performance could be stated (Sullivan et alia 1978). So the final decision about the choice of media can only be made on grounds as cost effectiveness or acceptance by students.

If not only comparable learning efficiency is aimed at, but a better performance of students is wanted, a trade off between increased learning efficiency through more sophisticated videotapes and the additional cost of the medium is obvions.

The efficiency gain is regarded as extremly high when the tapes are used as a supplement to direct teaching (Gibbons et alia 1977, pp. 1139-1146). But in this case we have no savings in teaching capacity and the costs may therefore become excessivly high.

Anyway rational decisions on media can be made only when teaching alternatives are clearly specified and the different outcomes are valued by the decisionmakers.
Unfortunately we have reached so far only at some tentative conclusions and further research in this field is needed.

5. The use of videotapes by students

5.1 How to analyse use of media?

There are several reasons, why students may not make use of video cassettes offered to them with the course material. They may have no access to video players or may have no information about the existence of video cassettes. Furthermore they may need no additional help to study the correspondence text.

First analysis about use of media and communicative behaviour of our students was published in 1979 (Bartels, Stuke, 1979). The study had a rather broad scope and was based on questionnaires.

An interesting outcome of what the students expect from additional learning aids is that they are closely related to the correspondence text and that they should help mainly to explain the abstract problems rather than having enrichment or motivating character. This is in line with experience reported from the Open University (Durbridge 1980).

5.2 The design of our analysis

We have used a bit different approach this time. We did not rely on questionnaires but mainly an structured telephone interviews.

Furthermore we analyzed only one video series on linear equation systems and restricted our analysis to students participating actively in the studying of the course. That means that we only asked students who had sent back assessment papers related to the units to be studied immediately before they turn to the topic of linear equation systems.

We knew from analysis of supplementary audiocassettes dispatched directly with the course material, that up to 90 p.c. of the students had listened to the audio cassettes when they were actively involved into the study of the course material. We wanted to check the respective figures for a medium that is by far less accessible to students.

5.3 The results

Out of the students actively involved into the elementary mathematics course 65 had telephone and were living at Northrhine-Westphalia. We spoke to 58 of them. 21 p.c. had made use of the tapes. Some students indicated that they intend to watch the tapes later on. If those are included user ratio increases to 36 p.c. About 80 p.c. of the students said, that they would watch the tapes, if they had own recording facilities. Only five students had own recorders. Mainly use of the cassettes was made at study centres mostly guided by the course tutors.

Analyzing causes for the non-use of the video cassettes we found the following facts to be responsible

- some students had slowed down intensity to study the respective correspondence units
- information about existence and playing facilities was lacking
- a lot of students make no use of study centres and do not participate at the additional instructions given by course tutors
- some expected no substantial help from video cassettes or they had no major difficulties with the concept of linear equation systems
- they found use of the medium too time consuming.

Defaults of the recording facilities used or a higher preference to direct teaching by course tutors seemed to be no substantial cause for the non-use. A quantitive analysis of the causations mentioned above proved to be difficult because restrictions of use were often additive.

5.4 The rating of the video cassettes

Students who watched the tapes found them very helpful in general. Some rated the program to be too easy but they had mostly substantial preknowledge on the topic. Learning atmosphere was rated favourable. Not all exercises included into the tapes have been solved. Also the tape has rarely been stopped to repeat passages. This indicates that students still have to get more familiar with this type of instruction. The tapes were used mostly after studying the correspondence text, but this may have been also due to tutors decisions.

Students as well as tutors found that learning from video cassettes is easier than with the correspondence text and that it offers a welcomed change in media. Video programs should to their opinion not be replaced by additional written instructions.

5.5 Some conclusions from user analysis

We have the impression that the design of our video cassettes is accepted by the students. At present tutors at study centres are important "multipliers" with regard to students attitude towards video cassettes. In the long run we will have to push forward use of video programs at home. Sales of video recorders are temporarily increasing at high rates. So a user ratio of 50 p.c. of students actively studying a course may not be un utopian figure to be achieved at in the next five years. Important too is a high didactical quality of the video cassettes to give student reasonable grounds to expect help from video taped instruction.

IMPROVING THE ORIENTATION AND PERFORMANCE OF FIRST YEAR CORRESPONDENCE STUDENTS AT THE UNIVERSITY OF ZAMBIA

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INTRODUCTION

The inclusion of distance teaching at the University of Zambia has been a boon to the society, by raising the education of adults to meet high-level manpower for national development. The objective of providing the same degree programme to both internal and external students has raised the hopes of many adults who would not have had access to full-time facilities. Inherent in the distance teaching model are factors which hinder meeting the desired goals of both the institution and the students. The main factors are the problems related to the adult learner and the techniques used by the institutions which affect the quality of education and retention of students.

As the institution is the custodian of any educational provision, it must address itself to (a) recognizing the characteristics of the learner, be that adult or young and (b) techniques of meeting her/his education needs. In this case the adult learner who is a correspondence student.

(a) Student Characteristics

Correspondence Students at the University of Zambia maybe classified in terms of age, occupational, educational and marital backgrounds. The age range is between 25 and 50 years. Their occupational backgrounds are varied but the majority are civil servants and teachers. Educationally some have attained only a Junior Secondary Certificate with a few Senior Secondary level qualifications. For those who do not meet the normal entry requirements, (that is a minimum of five (5) credits at G.C.E. 'O' levels) the University has made a provision for them to qualify through the Mature Age Entry Scheme. The detailed analysis of these factors is not the concern of this paper but are fundamental to the underlying problems which effect adult learners.

Although there are internal students who are adults with the same backgrounds, the effect is not as explicit as that of correspondence students. Delehanty and **Miskimer** have identified motivational problems related to the above factors. Correspondence students are faced with, role conflicts related to family, occupational and study obligations. This state may lead to what they call 'the induction Crisis' a period to decide whether to take up studies or not.[1]

In this connection Wedemeyer points out that educators should be skeptical about the assumption that students who enrol for Correspondence Study or School are ready. Readiness is a complex phenomenon in that "it involves past experiences, tentative acceptance or setting goals, assessment of means, goal/relationship, concept of self and acceptance of evoked motives of whatever kind.[2] In the absence of readiness to begin studies one finds a group of non-starters or early drop-outs and under - achievers. Nevertheless this assumption arises from the fact that a correspondence student is highly motivated initially. He/she gets into an institution with his/her effort by going through the process of finding an institution, applying, getting accepted, paying fees and selecting courses.[3]

Taking this statement into consideration, why is it that there is a high incidence of drop-out rate among correspondence learners? Is the paradox within the students or the institution? If the student is highly motivated to begin with but then drops out, one must assume then that the educational means are not being provided to fulfill the motivation.

(b) Techniques

The orientation of first year undergraduate is a natural process of induction at Universities. But this aspect has been taken for granted in many institutions offering off-Campus programmes. In other words, correspondence students are not given any physical orientation to the institution in which they are registered.

The purpose of orientation is to introduce a new student to an institutional set up, its environment, fellow students, course programmes and all the other facilities to which the student will be exposed. It is essentially an educational technique in that it provides a psychological base for student adaptation and adjustment to the educational community, thereby identifying oneself fully to the institution. Therefore orientation arouses a student's motivation as one is exposed to an atmosphere which is conducive to learning.

A correspondence student is naturally at a disadvantage because he/she is denied this opportunity at the onset of his studies. The assumption is made that a correspondence student is expected to know everything about the institution through the printed matter which is sent to him/her along with instructional materials. The only opportunity correspondence students have, to know the physical environment of the University is during a two-weeks Residential School held once every academic year. It is conducted after the first academic term during a vacation when correspondence students meet their lecturers, fellow students and the staff in the Department of Correspondence studies, for the first time.

2. THE PRESENT PRACTICE

We may distinguish the orientation of students at the University of Zambia by looking at what is provided for internal and external students.

Internal Students

All first year internal students are expected to attend a one-week orientation programme before the official opening of an academic year. They are addressed by various University officials in the top hierarchy. During this period, students are made familiar with their respective schools where registration takes place. They are given a thorough library orientation as this is the seat of their studies. They meet fellow students in the dining halls, etc. They get to know various administrative channels (offices) and recreational facilities. At the end of this period the Dean of Students' Office organizes a get-together party for the students and the staff.

Even after this, the student knows his/her wereabouts for academic/personal counselling and extra-curricular activities. And when the classes begin, First year students are given an opportunity to attend introductory lecturers in the courses they wish to take, the idea is to give the student a chance to change one's subject if it is not relevent to one's career aspirations.

Correspondence Students (External)

Once a correspondence student is accepted, the Department of Correspondence Studies an administrative Unit under the

Centre for Continuing Education, takes over the responsibility of sending a package of information to the students on enrolment procedures and study instructions and on academic procedures and regulations. Since this is not a teaching department its function is administrative, by providing as a link between the Correspondence Students with other Units of the University. It is responsible for the production and delivery of study materials to the students. It **monitors** the teaching and learning by keeping records of the flow of study materials, assignments and personal files. The Department also responds to students' queries through the course advisors/counsellors and senior administrative officers in the department.

Therefore orientation of correspondence students is facilitated by the information sent from the department on behalf of the University, the schools offering courses and their teaching departments. The package contains the following information.

1. Enclosures

(a) enrolment
(b) list of courses offered
(c) major/minor declaration form
(d) Document on selection of courses for a major and minor in the schools
(e) statistical information card
(f) specimen signature slip
(g) **sessional** calendar of the University

2. Instructions on

(a) Courses available
(b) Choice of a major or minor

(c) An acceptance letter

(d) Fees chargeable

(e) Channels of Communication with the University

(f) Withdrawal procedures

(g) Residential School provisions

(h) Exclusion for unsatisfactory progress

(i) Exemptions procedures

(j) Change of quota rules

(k) Important information regarding University Telephone, Telegram and Telex numbers.[4]

Both internal and Correspondence Students are supposed to buy a copy of the School's Handbook which contains names of top administrative officers and faculty members, University policies and regulations on academic matters and detailed information on course offerings. Unfortunately, by the time a correspondence orders a copy from the University Bookshop, the copies would have run-out even for full-time students. In any case, students do not seem to read all the information given or they find it complicated to comprehend as we shall see.

When enrolent is finalized the student is sent further information including a book list, an order form for books from the University Library or Bookshop and the names of the lecturers teaching the courses in which a student is enroled. Even before the study materials are sent to the students, there is already initiated an endless correspondence from the students containing various queries. The student continues to be invisible until he/she turns up to Residential School. Some students make an effort to contact the Department in person or by telephone. From the writer's experience these solitary students appear as if they do not belong to the institution, which holds their future.

Research on both internal and external students regarding study problems has revealed factors related to inadequate information provision and proper guidance at the beginning of one's programe.

3. PROBLEMS

Although some of the problems identified are pertinent to both internal and correspondence students, at least an internal student may obtain help in the long run from fellow students and the lecturers. Whereas for a correspondence student such problems may persist indefinitely until they begin to affect one's studies. The problems identified are as follows:-

(a) Isolation

According to a survey made by Kaunda, 80 per cent of Correspondence Students have listed isolation as the major factor affecting their studies.[5] One might argue that the nature of correspondence study is that a student is an independent learner. But according to Childs "studying by oneself over a long period of time can be a lonely business. Not a matter of physical isolation, it grows out of the lack of opportunity to work with others on matters of common interest".[6] With the improved methods of distance teaching, this should not be an obstacle.

The problem is exacerbated by denying correspondence students physical orientation to the institution to familiarize them with the various aspects of educational facilities provided to first year internal students. Given the chance

Correspondence students would be able to establish contact with other students, get to know the members of staff and above all to get the picture of how the Department of Correspondence Studies operates, so that they would be more understanding on some operational problems which may arise from time to time. A pre-course orientation would minimize the hustle experienced by the staff and the students during Residential School, or at library orientation and even while they attempt to make use of other University facilities.

(b) Lack of Contact with Lecturers and Fellow Students

As regards contact with lecturers correspondence students only know their lecturers impersonally through assignments and study materials. The only physical contact is during Residential School period which is too short. The rigid channels of communication by which students have to direct all their correspondence through the Head of the Department of Correspondence Studies, makes it difficult for both the student and staff to know one another. However, the system serves its administrative purposes. Nonetheless, a functioning telephone would be viable for quick feedback on urgent matters regarding academic queries. The same problem has been identified by Wilson among internal students who view staff/student contact as inadequate.[7]

Lack of contact with fellow students is partly due to the Correspondence Department's failure to provide all students with addresses of other correspondence students. The other reason is the Geographical location of students taking the same course; however, this is not a barrier in terms of postal communications. The third reason is lack of student groups and availability of a study centres. The only centres where students occasionally meet are the Provincial Centres which fall under the Centre for Continuing Education of the University of Zambia, to which the Department of Correspondence Studies belongs.

As pointed out above, these are usually far from the student's homes. The only time students meet is during Examinations times or when staff from the Department of Correspondence Studies visit the students. All such problems and more could be aired it orientation was introduced.

(c) Getting Advice on Courses

Although this information is provided in the package sent to students yet the students still find the choosing of courses a problem. The same applies to internal students in Wilson's findings. Students find School Handbooks difficult to understand and claim that they are complicated.[8] For correspondence students who do not even attend briefings on courses, they find themselves in a worse situation, as far as the choice of subjects is concerned. They get detailed information in the study materials, but this gives them no choices. Furthermore, school handbooks are not readily available sometimes at the beginning of the term. Some students are even naive enough to ask fellow students who often give them wrong advice. Guidance on courses is a very important aspect of the orientation period.

(d) The Technique of University Learning and Teaching

For both internal and external students, this problem effects them particularly in coping with the demands of University education. Internal students experience other problems relevant to a class-room situation; for external students, it is the comprehension of study materials that is the problem. The main features of this problem are lack of study skills, and reading habits (faster) poor, writing skills with a critical approach, organization of study time and coping with a second language.[9] Suggestions have been made to introduce a half-course on study skills or course in written/spoken English for First Year Students.

(e) Obtaining Prescribed Books

This problem is also experienced by both internal and external students. Although this is an administrative problem, first year students are at a disadvantage in that they do not know which students to borrow books from. More so for Correspondence Students, who do not even know their fellow students. Notwithstanding the unavailabity of books, correspondence students are given preferential consideration in that both the library and the Bookshop reserve books for them. The essence of orientation is also to explain to the students the administrative set-backs and to expose them to fellow students.

The above problems are a result of findings on students who are in the system. This should give us a starting point to remedy this situation for prospective candidates. The institution should be aware that adult students generally embark on studies with fears, uncertainities and indecision. In this regard Delehanty and Miskimen suggest that counselling intervention should be done prior to registration or early at the beginning of the course.[10]

CONSIDERATION

The Orientation of First Year External Students is not new. It is being practised at the University of Hildesheim and the University of Bremen in the Federal Republic of Germany, according to Brandes and Raters.[11] This is done during week-end Schools in the Study Centres. Also provision for counselling and guidance is made throughout the academic year. Where a student is unable to attend, he/she is encouraged to contact the tutor/counsellor for self-introduction. The significance of pre-course orientation is that students who attend experience less problems.[12]

However the organization of any orientation programme depends upon the particular institutional set up.

Below is a suggested Paradigm for orientation activities at the University of Zambia.

A PARADIGM FOR ORIENTATION ACTIVITIES

SOURCE	ACTIVITY	INFORMATION	LEARNING OUTCOMES
Dean of Students	Accommodation Boarding facilities/Food	Familiarization with the role of the Dean of Students	Getting to know other students in the hostels
Central Administration	Welcome Addresses	Institutional Identification	Widening knowledge on the role of the University
Library	Library Orientation	Use of the Library	How to borrow books, selective reading, book ordering etc.
Department of Correspondence Studies	Address to Students	Briefing students on the nature of the Correspondence Studies Programme	Clarity on what is expected of the students
	Orientation of the Departmental Sections	Familiarize students to operational procedures of the Department	Appreciation for the role of the University in the provision of the programme
	Counselling	Guidance on the choice of courses	Reduction in anxieties in the learning process
		Briefing on degree programmes, University policy and regulations	Clear understanding of one's programme of study Become aware of the consequencies of contraverning University regulations
	Grouping students according to geographical location and identification of Regional Centres	Create contact and communication among students	Reduce isolation, stimulate learning
Department of Correspondence Studies	Briefing on the Newsletter /Bulletin	Activities of the Correspondence Studies Students' Association	Awareness of the freedom of expression
		A forum for exchange of ideas	Identification with the University
			Contribution to the teaching and learning
Central Administration and Dean of Students' Office	Social Gathering	Student/Staff Interaction	Adjustment and creation of self- confidence

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12. Ibid.

This paradigm is not a means to an end as far as correspondence students are concerned. However it provides a guideline for further study to identify the needs of correspondence students during their initial year. As pointed out earlier on, there are certain problems which are specific to correspondence students. For instance, to consider orientation for external students the following factors should be taken into account:-

(a) TIMING: Should orientation take place at the same time with Internal Students, Or should it be staggered?

(b) DURATION: Will the normal one-week orientation for internal students be suitable for external students?

(c) ACCOMMODATION: Has the University got the facilities to accommodate extra students?

(d) COST: Will this be an additional expense on the students?

These issues may bring to light the fact that not all students would attend orientation, just as the two-week Residential School is not fully attended. However, recognizing the importance of pre-course orientation, provision for guidance would have to be ensured and certain regulations applied as in the case of Residential School.

We can conclude to say that the paper has looked at pre-course orientation as part of distance teaching and as an introduction to the course of study. Its importance is to prepare the student to the learning situation within or outside the institution. As the focus is on the adult learners who may have obstacles of being present in a face-to-face situation, other means of communication should be utilized to serve the student. The most important feature in learning is initial motivation which means that, even information sent to the student should as much as possible portray the institutional set up in a personal manner.

IMPROVING BUSINESS EDUCATION

THURSDAY, 17 JULY

1600 - 1730

TOWARD INTERNATIONALIZATION:
STRATEGIES FOR STRENGTHENING BUSINESS EDUCATION

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It has now been over a decade since the American Assembly of Collegiate Schools of Business (AACSB), the principal accrediting organization for business education in the U.S., began expecting its members to incorporate international dimensions in their programs. From the outset, there was no common agreement as to how the new standard should be met. Indeed, the AACSB's current statement provides wide latitude: "There is no intention that any single approach is required to satisfy the worldwide dimension of the Curriculum Standard, but every student should be exposed to the international dimension through one or more elements of the curriculum" (AACSB, 1985). This flexibility of response, while perhaps desirable, has led to a tendency to treat the international dimension as an afterthought, relegated to the last chapter of a textbook or toward the end of a course syllabus. In short, the topic all too often becomes trivialized or handled as readily dispensable in case of insufficient time or interest.

Underlying the AACSB's important stimulus toward internationalizing the curriculum was an understanding of the reality of interdependency among nations and the implications of such interconnectedness for leaders of business. Since many business students, particularly in the United States, tend to be relatively parochial in their experience and view of the world beyond the domestic scene, universities have an obligation to challenge myopic perspectives by addressing worldwide concerns in the curriculum. This attention must not be limited to a few splashy externally-oriented activities; rather, it should permeate the core courses of the business school.

Since business students are generally highly motivated toward the achievement of success in their careers, they quickly grasp the importance of monitoring the uncontrollable factors which constitute the elements of the overall business environment. In other words, the dynamics of the international scene become more meaningful when students recognize that no manager--foreign or domestic--can afford to ignore the implications of interdependence and change.

To be effective in an ever-shifting world, a manager needs to hone skills, develop sensitivities, and sharpen communications tools. In terms of basic skills development, the business school must assure that graduates have complete preparation in the core fields comprising the "common body of knowledge" and, frequently, in a specialization among the functional areas (e.g., accounting, finance or marketing). Part of the foundation prerequisite preparation should include macro-economics, including essential concepts and theories of international trade.

Students should be shown how to monitor the business environment--that is, to consider the implications for decision-makers of change in economic conditions, social and cultural dynamics, technological progress, the legal and political situation, and so on. For example, managers operate increasingly in a multi-cultural context. Thus, sensitivity to cultural differences is valuable in both domestic and international business. As Wind notes, "a manager in the turbulent international environment must not only be a skilled professional, he must also carry with him a deep realization of cultural diversity and the capacity to adjust his skills and strategies accordingly" (Wind, 1983).

Managers are principally communicators, in that they spend most of their time interacting with others in order to get tasks accomplished. Thus, business schools can facilitate management development by providing tools for effective communication. For purposes of international business, an understanding of cross-cultural communication and of non-verbal interaction is particularly critical. Enhanced sophistication of communications for the international setting should tend to influence positively the degree of sensitivity to cultural differences as well. Among the communications tools of greatest relevance for international business are foreign language competence, public speaking abilities, active listening skills, and acceptance of interpersonal differences.

To summarize, the principal outcomes of management education broadened to incorporate the worldwide dimension should include comprehensive knowledge of core subject matter, an ability to monitor the international business environment, and effective communications skills, particularly in a cross-cultural context.

Strengthening the International Dimension: Suggested Strategies

1. Foreign languages

Facility in foreign languages is immensely helpful to the successful conduct of international business. For example, an understanding of subtleties of meaning can influence the dynamics of negotiation.

Similarly, a social rapport, which can be more readily established through foreign language competence, is a necessary foundation of many business relationships.

Foreign language study helps business students strengthen their communications skills in their native language as well, since it focuses attention on structure, precision, and accuracy of usage. With heightened confidence through language acquisition, the graduate will be more likely to establish effective business relationships. Also, language capability provides access to key business information sources. Prior language study increases the probability of accurate communication of an intended message between sender and receiver. Yet another advantage of foreign language training for the business setting is that it generates an opportunity for a greatly expanded network of professional contacts.

Unfortunately, foreign language courses at the university level fail to attract and maintain the interest of many business students. The principal reasons for this condition seem to revolve around a perception among students that foreign language courses do not offer an immediately discernible utility. As traditionally offered, foreign language courses follow a rather dry "building block" approach through which grammatical understanding is gradually built. Conversational uses are generally minimized and subsequent courses tend to emphasize the literary tradition of the language.

In keeping with the movement toward "foreign language for special purposes", the increased interest in internationalizing the business school might give added impetus to the further development of "foreign language for business purposes". Rather than relegating this new area simply to a separate, advanced course in specialized commercial vocabulary, it should instead become a critical focus within a redesign of introductory-level work in the language. By using pertinent business examples and illustrations from the outset, the business student will be able to grasp the immediate applicability of the language. Some progressive foreign language departments have already embraced this notion and it may be expected to become more widely adopted as appropriate teaching materials become available.

For some students, an intensive mode of foreign language learning will be far more effective than a more leisurely, traditional-length course format. This is particularly true for management development programs for practicing executives. Intensity provides students an opportunity to become immersed in the target language with a minimal amount of interference caused by distraction of time between sessions. Furthermore, intensive courses may facilitate the student's development of cultural awareness since they may be ideal settings in which to demonstrate cultural misunderstanding.

Because business students are often keenly competitive, they may be fearful of not performing well in foreign language courses. By using the same techniques of simulation and role-playing which are often employed in the business school, foreign language faculty may find greater success with such students. In one variation of this situation, each class participant could be permitted to select a new identity. For example, John Jones, a senior interested in international finance, could become (during his French class) Pierre Colbin, a banker for Crédit Lyonnais. In like fashion, all the other students (and even the professor) could choose a different persona. Under such circumstances, a positive atmosphere would be created in which the student would be less likely to be worried about making mistakes, and would thus become more receptive to language learning.

Materials should be selected which are topical and relevant to the contemporary cultures of those host nations where the target language is spoken today. Ideally, foreign language textbooks should contain lively, up-to-date, and pertinent information and illustrations concerning business and economic conditions, practices, and terminology. Recent copies of newspapers and newsmagazines should be used in class, including both the popular press and publications devoted to economic reportage. Audio-visual material depicting modern life and business practices should be used whenever possible. Videotape and videodisc technology facilitate this process of demonstrating the living language. Similarly, audiotape programs are beneficial if they include appropriate situations and sounds typically encountered in the host environment. Finally, since business students are generally familiar with computers, the instructor may want to explore using, as a supplement, one of the many self-instructional language learning programs available as software packages for microcomputers.

Another adaptation concerns conversational elements of foreign language courses. Managers must often make oral presentations to small groups in the work setting and, less frequently, engage in formal public speaking. Conversational practice in the foreign language should, therefore, include situations involving communication with groups in the target language. As part of this training, the business student needs to learn about appropriate formalities and protocol for such occasions.

2. Cross-cultural awareness

As mentioned previously, business students must learn the importance of establishing and maintaining rapport with associates and customers from other cultural backgrounds. Similarly, tools of cross-cultural analysis are productive in assessing market potential and in planning strategy to achieve organizational objectives in foreign environments.

The social sciences are rich in contributions in the cross-cultural field. For example, faculty from anthropology, psychology, and sociology can be tapped to discuss such essential intercultural concepts as contrasts among cultures, ethnocentrism, and the adjustment syndrome of "culture shock". Also, the roots and development of current conditions in economic and socio-political systems (which are themselves reflective of cultural patterns) can be interpreted by historians, geographers, economists, political scientists, and others. Business schools should avoid becoming insulated from the balance of the university. By using available resources from the key underlying disciplines of the social sciences to aid in internationalization, business programs can minimize the faculty development strain on their own staffs while integrating the liberal arts areas in appropriate ways into the professional school.

Cross-cultural understanding can be developed through a variety of techniques, most of which entail careful, close scrutiny of the characteristics of other societies. Students are encouraged to gain a more sympathetic appreciation for alternate ways of life. In this process, business students should be exposed not only to the constituent elements of modern-day cultures, but also to their manifestations in the workplace (i.e., "corporate culture").

3. "Mainstreaming" international dimensions

While some business schools have developed a single required course in international business, others have chosen to incorporate worldwide dimensions in multiple areas of their curriculum (e.g., in the core "common body of knowledge" fields). Both alternatives will be more effective if faculty members are committed to internationalization of course content. To achieve this goal efficiently, university administrators must provide positive faculty development incentives. Assuming that such conditions are present, there are a number of strategies from which faculty may choose to enhance internationalization in curriculum planning.

First, regardless of the subdiscipline involved, a comparative management approach may be taken. Thus, accounting practices in the Federal Republic of Germany may be compared with those in Great Britain; or distribution channels in Japan may be contrasted with those in North America. Such similarities and differences highlight again for students the interdependence of nations in economic affairs, as well as the importance of overcoming managerial inertia in order to be able to adapt to changing conditions. One means of developing materials with such a comparative approach is for researchers from different countries to write jointly-authored texts.

Second, course syllabi should be revised to ensure that international issues are addressed in each section of the course. By means of the inclusion of examples and illustrations of current business practices, perhaps further supplemented by modules or case studies, the course can readily incorporate a worldwide dimension throughout its structure.

Authors and textbook editors should be careful to incorporate footnotes and other citations that would refer students to additional source material with an international orientation.

4. Additional pedagogical approaches

Internationalization may be stimulated by the application of a thematic focus, such as an area studies approach. Thus, a geographic segmentation may serve to identify a particular region or grouping of nations (e.g., the European Economic Community) upon which the full attention of all international aspects of the business school curriculum would be directed for a period of time. For example, a school might designate a two term "Year of China", during which special public lectures could be offered (both by university faculty and selected visiting scholars), culturally appropriate social events would take place and, as much as possible, coursework would take on some of the flavor of the Chinese experience through examples and illustrations.

A focused approach facilitates more intensive study of international dimensions of business in that it permits greater specificity. For example, using area studies methods, students can explore one nation or region in depth, learning how to monitor the business environment and considering the strategic and operational implications for management in that locale. Again, there is a transference effect in that the careful examination of the conditions and cultural patterns of other nations can sharpen the student's ability to identify problems and opportunities in the domestic economy as well as abroad.

Guest lecturers, long a source of supplementary enrichment for business courses, are particularly pertinent to the quest for internationalization. For example, executives of companies which have been involved in foreign trade can enliven class discussion and serve as a sounding board for students contemplating international careers. Others whose visiting contributions could be valuable include government officials, representatives of foreign trade missions, and members of official international organizations. The utility of language study could be addressed by the example of people who have been successful in applying foreign language in their business activities. The business school may find it productive, in fact, to invite prominent individuals such as those mentioned above to constitute an advisory board for international programs. Their suggestions may be helpful in curriculum design and for programmatic development through fundraising.

Greater understanding of international business can be heightened by offering students carefully designed and monitored foreign study travel opportunities. If such experiences take place after completion of related coursework, students will be able to test and observe firsthand some of the notions discussed in class. Furthermore, the process of acculturation may move more smoothly since students will have gained greater sensitivity to cultural differences through their studies prior to departure.

The internship provides a powerful laboratory for student transference of classroom learning into a working environment. Thus, an international internship could serve well as a "capstone" experience for those students with a serious commitment to the field of international business. The university may well benefit as well, as the ongoing network of linkages involved with internships can be used to share ideas, techniques, materials, and could possibly yield opportunities for faculty development and consulting activity.

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ENTREPRENEURIAL AND SMALL BUSINESS EDUCATION: THE ARRIVAL OF A NEW ERA IN BUSINESS SCHOOLS

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Although economists have previously documented the shift to a service economy in the United States, its implications for American managers and higher education have yet to be fully understood. Just as the agricultural revolution was superseded by the industrial revolution, America is now in the midst of a post-industrial or service revolution supported by an entrepreneurial spirit of innovation and high technology. When historians in the year 2000 look back at the 1980s and 90s, they will probably record the current economic transition as the most pervasive and far-reaching in its effects on society.

As recently as 1984, approximately 74% of all workers were classified as service workers by the Bureau of Labor Statistics. In 1985, Fortune magazine reported that 95% of the 25 million new jobs created since 1970 were in services. In addition, services comprise 56% of the Gross National Product as compared with 21% for manufacturing and less than 3% for agriculture.

At the international level, other highly industrialized nations are also undergoing dramatic shifts in their economies as traditional manufacturing industries shift to developing countries and are replaced by those emphasizing the high technology and service sectors.

Entrepreneurial Society. Aside from the statistical composition of the Gross National Product and the resultant shifts needed in economic policies, the most important theme in these complex changes can be summed up in two words: "entrepreneurial" and "small". In the May, 1985 report of President Reagan to Congress, "The State of Small Business", a variety of statistical data demonstrated the dominance of the small business sector in generating jobs fostering economic growth. Among the more significant findings was that small businesses generated all of the net new jobs in the United States while big business reduced its total number of employees during the same period.

In a subsequent article in the Winter, 1985 issue of the Journal of Business Venturing, President Reagan again emphasized the important role of entrepreneurship and small business as follows:

> In 1950, Americans newly incorporated 93,000 businesses. In 1983, we started up 600,000. Some cynics say that big business owns the world of today. Whether that's true or not, small business is inventing the world of tomorrow.

Implications for Higher Education. As a consequence of the accelerating trends toward small business as well as the emergence of the service economy with its emphasis on high technology, it is incumbent upon the business educational community to re-examine some of its assumptions in providing relevant business training for the 21st. century. Although this is an on-going process, the arrival of the entrepreneurial era has been accompanied by profound changes in the nature and contribution of the work force.

Ginzberg (1981) finds that the economy has come to depend more on human capital than on physical capital. He stated, "it is the expansion of knowledge, skills, imagination, ideas and insights of working people that creates the margins from which physical capital is accumulated." The implication is clear that the growth and health of the economy depend on the excellence of educational support. Not since the Carnegie Commission and Ford Foundation studies on business higher education (1959) has the need for a critical re-examination been so important.

A study conducted by the Conference Board (1974), indicated that several major problems remained to be solved if business education was to fulfill its overall mission of training future business leaders. Among them were:

> Overemphasis on theory at the expense of practical instruction; failure to impart an understanding of the economic system and particularly the role of business in that system; and, anti-business bias on the part of education.

In 1975, in a speech presented to the American Assembly of Collegiate Schools of Business, Byron was highly critical of the ability of business educators to train future business leaders. He reiterated the challenge which has been confronting business educators since the Ford and Carnegie Commission studies by stating:

> ... if you can give me one skill, give me an open-minded broad person who has been intellectually challenged.

The following year, in a national study conducted by Freeley (1976), it was determined that:

1) Graduate business education will increasingly emphasize the practical elements in curriculum in order to provide exposure to the operational problems of the modern business organization.

2) There should be an interdisciplinary approach to curriculum utilizing the various social sciences and other disciplines in the preparation of students for today's business community.

More recently, in a further effort to integrate the academic and business communities, the American Assembly of Collegiate Schools of Business (AACSB, 1984) has commissioned a new study to examine "the entire scope of management education with a focus on the concept of lifelong learning." According to AACSB's Committee on the Future of Management Education and Development, "an artificial separation developed over time between education in the school and human resource development in the workplace."

The research project is an outgrowth of the joint effort of AACSB and the European Foundation for Management Development from 1978 to 1980 on the theme, "Management and Management Education in a World of Changing Expectation." In its culminating Paris conference report, the AACSB/EFMD project concluded that:

> the "front-end load model" of management education was defunct, greater stress must be placed on lifelong learning of managers, and there must be greater cooperation among the deliverers of management education and development such as management schools, corporate development programs, and professional associations.

As can be seen from the above historical overview, determining the most effective approach toward business education has been a subject of continuing study and refinement for many years. Although much progress has been made and the need for increased cooperation between the business and educational communities has been recognized by the recently commissioned AACSB study, there does not seem to be any emphasis on the role of entrepreneurship and the service economy as critical determinants of business education for the future.

On the contrary, most collegiate business curricula assume that the graduates will be working for a large firm rather than the more likely probability of working for a smaller firm. Although the curriculum content now offered can also be applied to a small business, the orientation tends to assume a "big business" application.

PROPOSED MODEL

In an effort to offer an alternative which complements the existing business curricula and fosters the necessary cooperation between higher education and business advocated by the AACSB, a philosophical shift must take place as to the role of colleges and universities that provide business training. Rather than maintaining an isolated role in preparing business students, the business school needs to be viewed as a "resource center" which affords interaction between and among faculty and the business and governmental communities.Envisioned as such, it might be composed of the following elements:

1) An existing business curriculum which includes all the relevant functional areas.

2) Required courses in entrepreneurship and small business which complement existing courses oriented toward big business.

3) The assignment of advanced level students to function as consultants to small business firms in the local area who need help with specific problems.

4) The utilization of the library as an information resource for smaller businesses in addition to its services to students.

5) The use of college facilities for business training.

6) Promoting the expertise of faculty as a resource for the business community.

Although the above elements exist in varying degrees in business schools, there still seems to be a lack of interaction between the academic and business communities. Instead of providing mutual benefit to each other, they tend to operate independently in solving their problems.

In order to serve the needs of the small business community in a service economy, the business school must function as a "resource center" in a manner analogous to the role of universities in the middle ages as centers of culture and knowledge. Unfortunately, the current approach is to train students for entry into the business world after graduation rather than function as an interactive center.

At the present time, the U.S. government operates two programs which could be included in the model: 1) The Small Business Institute; and 2) The Small Business Development Center. The SBI uses teams of students in a small business course who act as consultants to business under the guidance of a faculty member while the SBDC functions as an autonomous center of small business assistance for a geographic area without involving itself in curriculum and student areas. For purposes of the model, these two activities should be integrated in order to enhance the interaction between government, the small business community and the business school.

In a similar manner, the traditional library resources must expand their outreach to the small business community and serve as an information data base which provides answers to business problems. The same outreach approach should also be used in promoting the use of training facilities and faculty expertise.

In summary, the continuing need to adapt business education to economic and societal changes is a difficult challenge. With the transition to an entrepreneurial era within a service economy, business schools must develop an orientation toward serving the needs of small business which supplements their existing curriculum content. In order to accomplish this, they must become more interactive with both business and government.

The proposed model suggests one approach toward improving business education in an entrepreneurial era. It also supports the on-going research studies seeking a better way to integrate the academic and business communities resulting in mutual benefits for all in building a better future.

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THE DEVELOPMENT OF A UNIT OF INSTRUCTION ON INTERNATIONAL BUSINESS COMMUNICATION

Jules Harcourt
Murray State University

INTRODUCTION

Business communication faculty in colleges and universities are faced with the challenge of providing effective instruction on international business communication in their basic business communication courses. There are two important reasons why international business communication instruction must now be provided: (1) in the past few years there has been a dramatic increase in international business activity, and (2) the success of managers and employees in international business depends upon their skill in using the techniques of cross-cultural communication.

A way to introduce students to international business communication and to further their international business education is through a unit of instruction in the basic business communication course. This paper describes the development of such a unit of instruction. The content of the paper is based on research conducted to support the writing of a chapter on international business communication for an American basic business communication textbook. The textbook, entitled *Business Communication*, was written under contract with South-Western Publishing Company and is scheduled for publication in August 1986. Segments of this textbook are quoted throughout this paper as examples of the types of information which should be included in a unit on international business communication.

This paper shares with business faculty members the following two types of information: (1) the research approach used for the development of a unit of instruction on international business communication, and (2) the suggested content for such a unit of instruction.

THE CONDUCT OF THE RESEARCH

The primary intent of the research was to gather and analyze appropriate current materials related to enhancing the effectiveness of cross-cultural communication.

Sources of information were developed from colleagues contacted at professional meetings and visited on campuses; library searches at the U.S. Library of Congress and in various university libraries; and surveys of businesses, governmental agencies, and educational institutions.

Colleagues

Colleagues were extremely helpful in providing leads to sources, textbook references, and bibliographies. Many of these sources of information led to other sources. The value of colleagues as initial suppliers of leads was critical in the research process. Attendance at professional meetings played a vital role in contacting colleagues.

Library Searches

The most productive library search was a computerized search conducted at the Library of Congress. Other searches were manually conducted at three university libraries. The Library of Congress search resulted in a comprehensive bibliography of 105 references. (A copy of this bibliography can be obtained by contacting the author.) While at the Library of Congress, several selected references were explored in depth and provided essential information. A few of the most valuable references for Americans are the following:

Terpstra, Vern, and Kenneth David, The Cultural Environment of International Business, South-Western, Cincinnati, 1985.

Ricks, David A., Big Business Blunders, Dow Jones-Irvin, Homewood, IL, 1983.

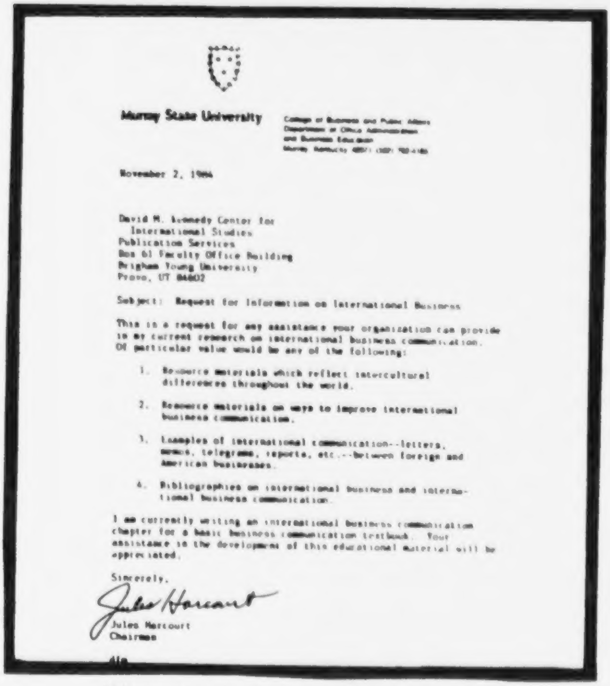
Gudykunst, William B., and Young Yun Kim, Communicating with Strangers, Addison-Wesley, Reading, MA, 1984.

Hall, Edward, T., Beyond Culture, Doubleday, Garden City, NY, 1976.

Dodd, Corley H., Dynamics of Intercultural Communication, Wm. C. Brown, Dubuque, IA.

Surveys

Surveys of businesses, governmental agencies, educational institutions and publishers were conducted to obtain information on international business communication. Illustration 1 shows a letter which was used to request information from organizations.



Murray State University

College of Business and Public Affairs
Department of Office Administration
and Business Education
Murray, Kentucky 42071 (502) [illegible]

November 2, 1984

David M. Kennedy Center for
International Studies
Publication Services
Box 61 Faculty Office Building
Brigham Young University
Provo, UT 84602

Subject: Request for Information on International Business

This is a request for any assistance your organization can provide in my current research on international business communication. Of particular value would be any of the following:

1. Resource materials which reflect intercultural differences throughout the world.
2. Resource materials on ways to improve international business communication.
3. Examples of international communication--letters, memos, telegrams, reports, etc.--between foreign and American businesses.
4. Bibliographies on international business and international business communication.

I am currently writing an international business communication chapter for a basic business communication textbook. Your assistance in the development of this educational material will be appreciated.

Sincerely,

Jules Harcourt

Jules Harcourt
Chairman

dle

Illustration 1. Letter Sent to Organizations

Many organizations provided extensive information on international business and cross-cultural communication. Some of the most outstanding sources of information are the following:

David M. Kennedy Center for
International Studies
Publication Services
Box 61 Faculty Office Building
Brigham Young University
Provo, UT 84602

Business Intelligence Program
SRI International
333 Ravenswood Avenue
Melo Park, CA 94025

International Association of
Business Communicators
Suite 940
870 Market Street
San Francisco, CA 94102

The Experiment Press
School for International
Training
Brattleboro, VT 05301

Society for Intercultural
Education, Training, and
Research
1414 Twenty-Second Street, N.W.
Washington, D.C. 20037

Atlas Van Lines International
1212 St. George Road
P.O. Box 509
Evansville, IN 47703

Academy of International
Business
World Trade Education Center
Cleveland State University
Cleveland, OH 44115

International Communication
Association
P.O. Box 9589
Austin, TX 78766

Intercultural Relations
Institute
Stanford University
Stanford, CA 94305

Intercultural Communication,
Inc.
P.O. Box 1438 University
Minneapolis, MN 55414

Price Waterhouse
1251 Avenue of the Americas
New York, NY 10020

Intercultural Press, Inc.
P.O. Box 768
Yarmouth, MA 04096

All of the information obtained from colleagues, organizations, and publishers was analyzed to determine the most essential instructional material to include in a unit of instruction on international business communication.

THE RECOMMENDED UNIT OF INSTRUCTION

Based on the research described in the preceding sections, it was determined that a unit of instruction on international business communication should contain the following content:

1. Extent of international business
2. The challenges of international business communication
3. Guidelines for successful cross-cultural communication
4. Sources of information on international business communication

Excerpts from the new textbook which illustrate the above four categories of content are presented in the following sections of this paper.

Extent of International Business

International business communication is increasing in importance because of the rapid increase in international business activity. The extensive involvement of American businesses in international trade is surprising to many American students. Here are examples of the American involvement taken from the new business communication textbook soon to be published:

> The extent of individual American corporation activity in international business is one indication of the importance of your understanding this part of the business world. In recent years, the United States-based corporations that earned more than fifty percent of their profits from their international operations included--to name just a few--IBM, Coca Cola, Uniroyal, International Harvester, Gillette, Otis Elevator, Dow Chemical, American Standard, and most of the major oil companies [1].
>
> The U. S. share of the world market is between fifteen and twenty percent. In addition, over twenty percent of the products sold in the U. S. are imports.
>
> Some twenty-five percent of American corporate executives are estimated to have had international business management experience.

The Challenges of International Business Communication

The challenges of international business communication can best be studied and discussed using three categories: language differences, nonverbal communication differences, and other cultural differences.

Here are examples of the kinds of information on language differences students should study and discuss:

> There are over 3,000 different languages in the world. There are over 200 different languages in India alone. If all the various dialects are taken into consideration, some linguists estimate that there are at least 10,000 different variations of languages used in the world. If you are not skilled in the use of your receivers' primary language, you are facing your first major challenge of international business communication.
>
> American car companies have experienced many difficulties because of lack of knowledge of another culture's language. Chevrolet's "Nova" car was not received well in Spanish-speaking countries. Its name sounded like "no va" in Spanish, which means "it doesn't go." Ford named its "Comet" car "Caliente" for the Mexican market. Unfortunately, "caliente" is a slang word for "streetwalker" in Mexico, and poor sales resulted [3].

Example material which illustrates the diversity of nonverbal communication differences around the world includes the following:

> The cultural diversity in nonverbal communication can be illustrated by an examination of worldwide differences in the nonverbal way people greet each other. Nonverbal greeting(s) vary from a bow, to a handshake, to a hug, to an upward flick of the eyebrows. Nonverbal greetings depend on the country and the culture involved.
>
> Not understanding cultural differences in nonverbal messages causes communication problems. For example, if in Germany an American were to signal "one" by holding up the index finger, it would be understood as "two." Germans signal "one" by holding up the thumb and "two" by extending the thumb and index finger. An American ordering an train ticket in Germany by raising the index finger, therefore, would likely get two tickets instead of one.

Underlying the cultural variations in verbal and nonverbal communication are many other deep-seated cultural differences which affect communication. These differences are in values, attitudes, religions, political systems, social orders, and many other basic differences. The most important differences are in the ways people in other cultures think and feel. Here is an excerpt on this topic from the unit of instruction on international business communication:

> The friendly, outgoing, competitive, informal American who tends to use the direct plan of communicating may not be received well in Asia or some European countries. In most countries people are more reserved and less direct in their human relations than are Americans. For most Japanese, for example, there is a need to build a "personal" relationship of trust and knowledge of each other before an important "business" relationship can be entered into. On the other hand, most Americans are willing to do business with a limited or non-existent personal relationship with their customers or vendors. In successfully relating to the Japanese, therefore, Americans must be willing to build the necessary personal relationships first. This requires more patience than most Americans normally have to practice in their business dealings in the United States.

Guidelines for Successful Cross-Cultural Communication

After students understand the importance and challenges of international business communication, they are ready to study guidelines for successful cross-cultural communication. The recommended guidelines are:

1. Review the foundations and principles of business communication.
2. Analyze your own culture.
3. Develop the ability to be open to and accepting of other cultures.
4. Learn all you can about the other culture and apply what you learn.
5. When communicating to another culture in English, keep your message short and simple.
6. When using an interpreter, use short, simple phrases and sentences.
7. Practice with your interpreter.
8. Select only translators who are qualified in the subject matter.
9. Provide for backtranslation of your written messages.

After the guidelines have been explained and discussed, students should be exposed to concrete examples of the application of the guidelines. Here is an example of an application of the key guidelines for cross-cultural communication using the Japanese culture:

> American businesspersons can improve communication with the Japanese by taking into consideration Japanese cultural attributes.
>
> The Japanese are modest and reserved, respectful of superiors and loyal to their organizations, contemplative and holistic in their thinking, and conformists to their society. They are achievement oriented. They value human relationships above business relationships and practice situational ethics. Their privacy is important to them; and direct questioning about their personal lives will be resented. Losing "face" is their worst catastrophy. The shame of losing face reflects not only on the individual but also extends to the family.
>
> American businesspersons when communicating with the Japanese should become gracious statespersons. In business meetings in Japan, bowing when greeting your hosts followed by a handshake are important gestures. Don't be surprised if the Japanese are somewhat late for the start of the meeting. As status and hierachy are important in Japan, an exchange of business cards upon meeting will be helpful to them in sorting out relationships. The American belief of "equality of all" does not prevail in Japan.

Sources of Information on International Business Communication

In this section of the unit the students are referred to international business textbooks and sources of information on cross-cultural communication such as books, professional associations, and university centers. These references include some of the sources of information given earlier in this paper. The unit of instruction concludes with a reference to the extensive employment opportunities in international business.

EFFECTIVE TEACHING STRATEGIES WHICH WILL PROMOTE STUDENT LEARNING IN AN INTERNATIONAL BUSINESS COMMUNICATION UNIT OF INSTRUCTION

To promote student learning in a unit on international business communication, special teaching strategies should be used. The topic can be intriguing to students. It deals with foreign, exotic cultures. It promises exciting adventure. The teaching strategies should build on these bases and include the following thrusts:

1. It will be important to stress the guidelines for successful cross-cultural communication. While it can be interesting to discuss differences among cultures, developing the ability to bridge cultures with effective business communication is the goal. All of your teaching efforts should be directed at that ultimate goal.

2. An understanding that must be communicated to students during the discussion of this topic is the following: seemingly superficial differences in customs and behavior are expressions of deeper, more fundamental differences. Differences in business hours, for example, reflect striking differences in basic values and lifestyles. The different ways the people of different cultures "think" influences their perceptions of messages.

APPROPRIATE DISCUSSION TOPICS TO BE INCLUDED IN AN INTERNATIONAL BUSINESS COMMUNICATION UNIT OF INSTRUCTION

The discussion topics that could be included in a unit on international business communication are almost limitless. The pervasiveness of the subject opens up many possibilities. The most important discussion topics should include the following: (1) The status of international business activity, (2) The importance of international business communication, (3) Cultural differences within the students' own country, (4) Differences in languages throughout the world, (5) Cultural differences in nonverbal signals, (6) Cultural differences in the way people think and feel, (7) Guidelines for successful cross-cultural communication, (8) Applications of cross-cultural communication guidelines, (9) Examples of communicating with specific cultures, (10) Sources of information on international business communication.

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[3] Ricks, David A., Big Business Blunders (Homewood, Illinois: Dow Jones-Irwin, 1983) p. 38-39.

TECHNOLOGY MANAGEMENT EDUCATION
FOR THE
THIRD MILLENIUM

Richie Herink
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Introduction

Everyday one sees indications that America is gradually but surely losing ground in high technology areas. For example, in 1984 the United States began to import more electronic products that it was exporting and the gap is increasing. In addition, Japanese computer, telecommunications, and related equipment is beginning to become technically attractive to the Pentagon, thereby raising questions about America's future defense strategies should these inroads become significant.

This pattern of decline follows the emergence of the mid-west "rust belt" where major corporations fell victim to foreign competition largely because of the lack of technical innovation in their products and manufacturing processes.

The question is: Does America still know how to effectively manage technology? As a nation it excels in entrapreneurial start-up ventures in high technology areas. However, once these firms mature they are often unable to sustain their early rates of innovation and many have gone bankrupt. Established companies too, find managing technology difficult and new products are often brought to market late, with insufficient novelty, are too high priced, and yet have low profit margins.

The United States currently spends over $97 billion on RD&E each year and nearly one million scientists and engineers are engaged in product development. The need to manage this huge effort is becoming more critical than ever before, especially in this era of accelerating technology on a multi-national level. In spite of this sizable expenditure, there are almost no formal education programs available anywhere which teach managers how to manage technology. They are required to learn on the job with all its attendant inefficiencies and shortcomings.

Environment

Technology is the mechanism mankind has used to increase its standard of living. It impacts all facets of society. The banking industry has evoked from a largely labor intensive activity to one which is highly automated, operating on a vast international scale. Disparate industries such as agriculture, entertainment, health care, transportation, and housing are continuely being shaped and reshaped by technology. Invention has become the intellectual activity of this generation just as art provided the creative outlet for people during the Renaissance. This emphasis on technology has largely been due to: 1) the growth of international commerce caused in part by the reduction of trade barriers, the elimination of colonial empires, the population explosion and resulting increases in consumption, and vast accessible transportation systems; 2) the dominance of the military in most countries and its insatiable need for newer and newer types of armaments; 3) the large number of people involved in technology development; 4) the information explosion and the ability to disseminate ideas rapidly; 5) the growth of investment banking on an international scale; 6) the nature of the economic competition between countries and companies, and 7) man's materialistic drive.Technology has become the competitive edge in the competition for world markets. The United States, which after World War II was the technically dominant country in the world, is now greatly concerned by the erosion of its basic industries such as steel, automobiles, machine tools, and other heavy manufacturing. These industries were the source of America's past economic power. Now there is increasing concern that high-technology industries including those which evolved from pioneering American inventions such as the transistor, atomic energy, computers, robots, etc. are too in danger of being eclipsed by products from other countries. This new competition is beginning to raise a nationwide dialog as to whether or not the United States can continue to maintain its currently high standard of living. As Simon Ramo (1984) has pointed out: "The international race for technical superiority is as ferocious as any cold war battle, and it is fundamental to deterring a hot war. To win can enable a nation to be master of its fate while also enjoying the fruits of superiority in technology. To lose badly can be a catastrophe."

The inability of the United States to compete in the international technical arena is in part due to the trading practices of various countries. It is also due to a tendency to mismanage technology. The Japanese semiconductor industry gained a foothold in America because of the superior quality of their products not because of cost. Nuclear power plants are no longer being built in America because of the continuous mismanagement of their construction on an often colossal scale. Union Carbide has difficulty managing a chemical plant. Japanese firms can buy an American company and turn it around from near bankruptcy to economic success with the same workforce and facilities. The stories go on.

Management is the cause of America's inability to compete in the high-technology marketplace. Without management there would be no technology. Technology management embraces all technical disciplines. It is their unifying element. Technology management is in effect a new technical discipline which combines elements of business, science, and engineering.

Education

In spite of the vast sums of money and resources spent on technology, there are few formal education programs in American colleges and universities which deal with this topic. Master of Business Administration (MBA) degree programs ignore technology. They deal primarily with business, personnel, and financial management; often from a CEO perspective. Master of Science (MS) degree programs in engineering management have a high operations research/statistics content and include subjects of general interest to managers in the broad range of engineering disciplines, including civil engineering. Industrial education, or in-house company training programs, also do not address this subject. Most report into personnel departments and, therefore, focus on "people management" topics at the expense of functional or business management.

The departmentalization and discipline proliferation tendencies of universities emphasize knowledge in depth rather than in breadth and consequently theory over practice. As a result, managers have no place to go to learn "how to run the store." This learning, therefore, largely takes place on the job via an oral tradition.

Need

As technology continues to dominate more and more of the world's commerce, governments, and society, it is becoming apparent that there is a need to turn businessmen and politicians into technologists and technologists into businessmen and politicians. In this context, technology management is viewed as comprising three activities: 1) Management of the Development of Technology; this is the product development process. It is especially central in today's environment which features short product life-cycles, multinational vendoring, large scale project management, multidiscipline components, application of scientific principles over engineering knowhow, and extensive use of design aids and tools; 2) Managing the Technology Itself: this involves the management of highly-complex automated production processes and systems having a low labor content such as a chemical plant or an automatic factory; and 3) Managing with Technology: is essentially the use of technology to solve a management problem. For example, the personal computer can increase a manager's efficiency and effectiveness, robots can reduce assembly time and cost, automating a machine tool can make it more competitive, management information systems can provide a manager with information to make timely and better informed decisions, etc.

Of these three activities, only the third is covered to some extent by those American colleges and universities which require students to use personal computers to solve business type problems. The other two have been identified as areas which need to be addressed but resources and experienced manpower are not available to develop the appropriate education programs.

Knowledge Base

One of the major difficulties in teaching technology management is the lack of available information about this subject. For example, the technology and management process and thought involved in putting together the effort to land a man on the moon and return him safely to earth has never been documented. Yet this is the technically most sophisticated and complex project ever undertaken by man. Case studies used as teaching tools in many leading graduate business schools deal primarily with consumer products. Those that involve technology are almost non-existent. The problem involves the diffuse nature of technology management and the reluctance of corporations, where the knowledge base resides, to let outsiders have access to this information for competitive or other reasons which might prove to be embarrassing to the firm.

The subject of technology management has never been codified. As a result, managers are making the same mistakes over and over again because this knowledge base has not been documented and is not being taught anywhere. The following section describes a program which is being implemented by a large American high-technology corporation to address the need for teaching its managers how to effectively manage the development of technology.

A Program

The courses in this special program were divided into three broad categories: 1) Technical Update; most managers especially middle managers are approximately 10-15 (or more) years away from their degree. They have to make technical decisions based on knowledge that is probably obsolete and they have difficulty communicating, technically, with their subordinates especially recent college graduates. A series of "technical refresher" type courses were developed to update these managers in a peer environment. The intent was to give them sufficient material so that they could ask the intelligent question. The courses typically last from 1-3 weeks and have titles such as: Information Engineering, Modern Manufacturing, Computer Science for Managers, etc., 2) Technology Development Within the Company; few managers have a complete understanding of the processes within which technology is developed in their own organization. These courses attempt to answer this question and also document how the company works as a business. Typical courses in this sequence include: Technology Trends, Business/Market Trends, Competitive Analysis, The Product Development Process, Using Available Technology, Vendor Relations, Strategic Planning, Project Management, Managing Dependencies and Interfaces, etc., and 3) Outside World Views of Technology Management; the aim of these courses is to provide a new and different perspective on how other firms handle similar problems. Courses in this category include: Managing Technical Professionals, Managing for Innovation, Manufacturing Management, Japanese Manufacturing Techniques, Managing Multiprojects, Making Strategy Work, etc. These courses are taught by consultants and university professors.

Conclusion

Managers of technology require a unique combination of technical, management, and business abilities in order to effectively design, develop, manufacture, and distribute their firms' products and processes. These abilities are more critical than ever before especially in today's climate of rapid technological change where new products are: increasingly complex; have shorter life-cycles; often involve multidisciplines, multiorganizations, and multivendors; are required to integrate with products developed by other business units and companies; have more demanding criteria for performance, quality, cost, and delivery; and require highly sophisticated assembly and manufacturing techniques and methodologies. Products and processes are being designed today for use into the third millenium yet traditional MBA and MS in Engineering programs do not address the educational needs of development and manufacturing managers in this dynamic environment. What is needed is a new graduate degree program in the management of technology which represents a cooperative effort between industry and the university schools of business and engineering. This paper briefly describes one company's efforts in this direction.

Reference:

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TEACHING APPLICATIONS OF MICRO-COMPUTERS IN INTERNATIONAL FINANCE

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Bentley College

There are many impressive applications of the micro-computer in the class room. The micro-computer can be used to create a set of class notes for students, to prepare transparency masters, to present case analyses, and to format lecture examples. Tests can be written, graded, and recorded with the aid of the micro-computer. Student papers and projects can be analyzed and annotated if submitted on disks. This is not intended to be a complete list of applications and certainly does not include every possible application. However, our student's responses to the instructor's use of the micro-computer as an instructional tool are positive.

On the first day of classes, each international finance student is provided with a set of micro-computer generated lecture notes. These handout notes correspond to a course outline that is stored in a word processor file. The class notes have at least two positive effects on student learning. First, the process of creating the lecture notes enables the instructor to eliminate any "fuzzy thinking" from lectures because the lecture must be planned and organized, in writing, before class. Second, the notes reduce copying for the student. This allows the student to concentrate on analyzing and understanding the lecture and subject material rather than on copying and remembering the lecture and everything that the instructor says. The class notes have large margins on each page. This modified lecture note-taking process is an active learning method because the student must write clarifying and explanatory comments in the margins of the handouts. The student also has the opportunity to synthesize materials from other courses into the existing notes.

The lecture notes are also used to create two sets of overhead transparencies. The first set of transparencies is based on the originals and has one concept or educational objective per transparency. The second set of transparencies is a set of notes that is used for review. A review of the previous lecture is given at the beginning of each class. In addition, a review of each major topic is given at the conclusion of the lectures and class discussion of that area. The second set of transparencies allows a quick, planned review without having to sort through pages of notes or other transparencies.

SPREAD SHEET PROGRAMS

Up-to-date examples of time dependent events are possible with any spread sheet package. Our examples are made with Lotus 1-2-3. Exhibit [1] shows the spot and forward rates for the British pound sterling and the German mark. These tables were created with Lotus 1-2-3 by inserting the spot and three forward direct rates for both currencies. All of the remaining figures - the indirect rate, percentage premia, points premia, and the cross rate figures are calculated by Lotus 1-2-3. Updating the table just prior to the lecture takes a matter of minutes and gives the student current information and examples. Business students are more responsive to current real world examples than to historical and dated examples.

GRAPHICS

Exhibit [2] shows a graph for multinational firm valuation used in lecture. This graph is made with TEXT-CHARTS 100 and drawn with a Hewlett-Packard 7470A plotter. These graphs are much neater, and more flexible, than hand drawn graphs or graphs copied from a textbook. It is relatively easy to illustrate how graphic scale changes can affect business decision making by illustrating the perceptual and interpretive problems caused by different scaling.

TESTING AND EVALUATION

The micro-computer facilitates the testing process. With a word processor, multiple forms of a single exam can be created with little additional effort on the part of the instructor. Different forms of examinations can be prepared by moving questions around or by changing key numbers in problems or questions.

In addition, spread sheet packages simplify the recording and averaging process and help provide a distribution of student grades. The instructor is able to test the sensitivity of student grades to changes in the grading scale.

STUDENT APPLICATIONS

Student use of micro-computers is particularly valuable for case analysis. First, the use of a spread sheet package like Lotus 1-2-3 greatly reduces the amount of "number crunching" for a particular case. This minimizes the time spent performing low level tasks and minimizes the likelihood of mathematical errors.

Second, spread sheet programs allow the student to perform complex sensitivity analysis. This type of analysis is difficult to perform without the rapid calculating ability of the hardware/software. The solution for "Imperial Power Spain" is five pages of financial statements long. This solution is based on information provided in the instructors' manual that accompanies Carlson, et. al., International Finance Cases and Simulation, Addison and Wesley, 1980. With five pages of pro forma financial statements, much time is required to perform sensitivity analysis by hand. However, with Lotus 1-2-3, the possibilities are unlimited and the time on task for constructing statements is minimized. For a given amount of time, the student can spend more time analyzing and evaluating the case rather than performing calculations. The student can, and will, determine the effects of price change assumptions, inflation rate assumptions, interest rate assumptions, and elasticity assumptions. Once the initial spread sheet is created, these other tasks can be done quickly and easily.

The third value of spread sheets results from the better information feedback to the student. The student can see the results of changes in assumptions immediately rather than wait until the hand calculations are done.

Fourth, and most important, the spread sheet construction forces the student to consider the planning and evaluation functions that result from pro forma statement preparation. Spread sheets that use multiple financial statements require that the student understand the substance and form of each statement and the interrelationships between the statements. This carries the student to a higher level of understanding and conceptualization.

The word processing capability of the micro-computer is equally valuable to the student and more valuable to the instructor. Students who use word processors can edit and rewrite papers as easily as the instructor. As a result, the papers contain fewer errors and the grading time is reduced because the papers are of higher academic quality.

Finally, students can use micro-computers for class projects that involve exchange rate forecasting and macro-economic modeling. Each international finance student is required to test a foreign exchange rate model or parity condition for a country or develop a macro-economic model for one country. These projects are completed on the micro-computer. Various charts and graphs can be created with the PrintGraph functions of Lotus 1-2-3. Lotus 1-2-3 can be used to run regressions, and the word processing software can be used to write the paper.

DETAILED EXAMPLE

The overall objective of this lecture is to create a greater understanding of the relationships between different exchange rates and spot and forward exchange rates. Students are shown (1) how to convert from direct to indirect exchange rates, (2) how to calculate the forward premium in both percent and points using either the direct or indirect exchange rates, and (3) how to calculate cross rates.

Exhibit [3] contains the formulae that are used to create the output presented in Exhibit [1]. These formulae could be typed in the cells using Lotus 1-2-3 directly as presented. For ease of presentation, most of the labels are not printed. We will discuss two columns only. Column 1 contains the information for direct exchange rates: dollars per unit of foreign currency. Column 2 contains the information for indirect exchange rates: foreign currency per dollar. The rows are numbered from 1 to 40. We are ignoring all of the labels and spaces in between to simplify the exposition.

Each cell contains either a number or a formula. Cells A1, A2, A3, and A4 contain the values of the dollar/mark exchange rates. Cells A11, A12, A13, and A14 contain the dollar/pound exchange rates. All of the exchange rates are taken from the January 16, 1986 Wall Street Journal. All of the cells in the B column and the remaining cells in the A column are calculated from the eight original exchange rates.

The indirect exchange rates are the inverses of the direct exchange rates. The indirect spot exchange rate for the mark is equal to one divided by the direct exchange rate. Cell B1 is equal to (1/A1), cell B2 is equal to (1/A2), cell B3 is equal to (1/A3), and cell B4 is equal to (1/A4). The indirect exchange rates for the pound are calculated in a similar fashion.

The percent premium can be calculated from the original four exchange rates. The thirty day premium for the mark is equal to the forward rate, cell A2, minus the spot rate, cell A1, divided by the spot rate times 100 times 12. The formula typed into the cell is [(A2-A1)/A1]*100*12. This gives the annualized percent forward premium for the mark. A similar formula is used to calculate the percent premium from the indirect exchange rates but using the values in the B column rather than the values in the A column.

To calculate the premium in points, the difference between the forward rate and the spot rate is multiplied by 10000. The premium in points for the mark for thirty days forward is ((A2-A1)*10000.

The cross exchange rates are calculated from the dollar exchange rates. The spot exchange rate between the mark and the pound, cell A21, is calculated by dividing the dollar/pound exchange rate, cell A11, by the dollar/mark exchange rate, cell A1. The spot exchange rate between the pound and the mark, cell A31, is calculated by dividing the dollar/mark exchange rate, cell A1, by the dollar/pound exchange rate, cell A11. The remaining cross rate cells are calculated as above.

CONCLUSIONS

In this paper, we have shown some of the applications of the micro-computer available to a teacher of international finance. In addition to applications in the areas of data analysis and word processing, micro-computers have applications in the classroom. Classroom uses include preparation of lecture notes, transparencies, timely examples, graphs, and test creation and grading. Students are able to use microcomputers for many of the same purposes: notes, case analyses, word processing, and course projects. Although we have discussed using micro-computers in international finance, most of these applications are easily transferable to other disciplines as well.

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Exhibit 1
Direct and Indirect Foreign Exchange Rates
Premia and Cross Rates

West Germany   January 16, 1986

	Direct Rate	Indirect Rate
Spot Rate	0.4058	2.4643
30 day forward	0.4071	2.4564
90 day forward	0.4093	2.4432
180 day forward	0.4127	2.4231
	Percent	Percent
30 day forward	3.844258	3.844258
90 day forward	3.449975	3.449975
180 day forward	3.400689	3.400689
	Points	
30 day forward	13	
90 day forward	35	
180 day forward	69	

Britain   January 16, 1986

	Direct Rate	Indirect Rate
Spot Rate	1.4355	0.6966
30 day forward	1.4300	0.6993
90 day forward	1.4191	0.7047
180 day forward	1.4035	0.7125
	Percent	Percent
30 day forward	-4.59770	-4.59770
90 day forward	-4.56983	-4.56983
180 day forward	-4.45837	-4.45837
	Points	
30 day forward	-55	
90 day forward	-164	
180 day forward	-320	

Mark/pound

	Direct Rate	Indirect Rate
Spot Rate	3.5375	0.2827
30 day forward	3.5127	0.2847
90 day forward	3.4671	0.2884
180 day forward	3.4008	0.2941
	Percent	Percent
30 day forward	-8.41500	-8.41500
90 day forward	-7.95123	-7.95123
180 day forward	-7.72766	-7.72766
	Points	
30 day forward	-248	
90 day forward	-704	
180 day forward	-1367	

Pound/Mark   January 16, 1986

	Direct Rate	Indirect Rate
Spot Rate	0.2827	3.5375
30 day forward	0.2847	3.5127
90 day forward	0.2884	3.4671
180 day forward	0.2941	3.4008
	Percent	Percent
30 day forward	8.474428	8.474428
90 day forward	8.112493	8.112493
180 day forward	8.038254	8.038254
	Points	
30 day forward	20	
90 day forward	57	
180 day forward	114	

Exhibit 2
Multinational Firm Valuation Graph

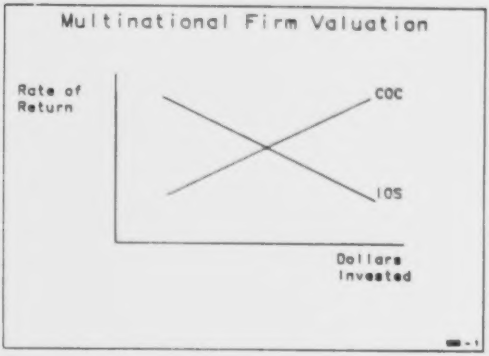

Exhibit 1
Detailed Example Using Lotus 1-2-3

```
Dollars/Mark
--------------------------------------------------------------
      DIRECT                         INDIRECT
      RATE                           RATE

            A                        B
 1    0.4058                         (1/A1)
 2    0.4071                         (1/A2)
 3    0.4093                         (1/A3)
 4    0.4127                         (1/A4)

PERCENT PREMIUM                      PERCENT PREMIUM
DIRECT RATE                          INDIRECT RATE

 5    ((A2-A1)/A1*100*12)             ((B1-B2)/B2*100*12)
 6    ((A3-A1)/A1*100* 4)            ((B1-B3)/B3*100* 4)
 7    ((A4-A1)/A1*100* 2)             ((B1-B4)/B4*100* 2)

POINTS

 8    ((A2-A1)*10000)
 9    ((A3-A1)*10000)
10    ((A4-A1)*10000)
```

```
Dollars/Pound
--------------------------------------------------------------
      DIRECT                         INDIRECT
      RATE                           RATE

            A                        B
11    1.4355                         (1/A11)
12    1.4300                         (1/A12)
13    1.4191                         (1/A13)
14    1.4035                         (1/A14)

PERCENT PREMIUM                      PERCENT PREMIUM
DIRECT RATE                          INDIRECT RATE

15    ((A12-A11)/A11*100*12)           ((B11-B12)/B12*100*12)
16    ((A13-A11)/A11*100* 4)          ((B11-B13)/B13*100* 4)
17    ((A14-A11)/A11*100* 2)           ((B11-B14)/B14*100* 2)

POINTS

18    ((A12-A11)*10000)
19    ((A13-A11)*10000)
20    ((A14-A11)*10000)
--------------------------------------------------------------
```

```
Mark/Pound
--------------------------------------------------------------
      DIRECT                         INDIRECT
      RATE                           RATE

            A                        B
21    (A11/A1)                       (1/A21)
22    (A12/A2)                       (1/A22)
23    (A13/A3)                       (1/A23)
24    (A14/A4)                       (1/A24)

PERCENT PREMIUM                      PERCENT PREMIUM
DIRECT RATE                          INDIRECT RATE

25    ((A22-A21)/A21*100*12)           ((B21-B22)/B22*100*12)
26    ((A23-A21)/A21*100* 4)          ((B21-B23)/B23*100* 4)
27    ((A24-A21)/A21*100* 2)           ((B21-B24)/B24*100* 2)

POINTS

28    ((A22-A21)*10000)
29    ((A23-A21)*10000)
30    ((A24-A21)*10000)
```

```
Pounds/Mark
--------------------------------------------------------------
      DIRECT                         INDIRECT
      RATE                           RATE

            A                        B
31    (A1/A11)                       (1/A31)
32    (A2/A12)                       (1/A32)
33    (A3/A13)                       (1/A33)
34    (A4/A14)                       (1/A34)

PERCENT PREMIUM                      PERCENT PREMIUM
DIRECT RATE                          INDIRECT RATE

35    ((A32-A31)/A31*100*12)           ((B31-B32)/B32*100*12)
36    ((A33-A31)/A31*100* 4)          ((B31-B33)/B33*100* 4)
37    ((A34-A31)/A31*100* 2)           ((B31-B34)/B34*100* 2)

POINTS

38    ((A32-A31)*10000)
39    ((A33-A31)*10000)
40    ((A34-A31)*10000)
--------------------------------------------------------------
```

STUDENTS AND SUCCESS

FRIDAY, 18 JULY

0900 - 1030

WHO ARE OUR STUDENTS?

Dietrich Brandt

The Technical University of Aachen, W-Germany

One of the main areas of research of the Centre for Resarch and Development in Higher Education (HDZ) at the Technical University Aachen is to look into who the students of our univerity are: what are their aims for university education and for life, how do they see themselves, how do they see their lecturers, how are their perceptions and their actions of studying correlated. In this paper, we give an overview of some of these different research projects. The emphasis is not so much on the results: we would rather like to give a report on the diversity of our research in terms of research aims and research methods. Most of these projects involve the use of SSPS or similar programs. Since these programs have been around we have tried to make use of them in order to contribute to improving teaching and learning at our university. Our main interest lies in education of engineers because the University of Aachen is a Technical University: the majority of the students study engineering.

The first question to ask is: what are the students'expectations and hopes when they enter university. Appel suggested 1980 a set of aims to describe and categorize the hopes of first year students at our university. He derived them from preliminary research (Appel 1985). They fall into the 4 broad areas 'autonomy - education - competency - status' with three selected subgoals in each of these areas. Schuntermann used these goals in 1981 in order to investigate the structure of students expectations (Schuntermann 1981). He asked students (N=55) firstly, to rank one against the other of the two subgoals of all pairs of subgoals possible, according to their importance for the individual student; secondly, to rank all subgoals into a linear ranking order. More than 50% of the students reproduced on their own the ranking order of aims as given above, another 30% the order 'autonomy - competency - education - status'. The 2-dimensional representation of the non-metrical Multi-Dimensional Scaling of the correlations between pairs of subgoals is shown in fig. 1. The diagram reproduces the linear structure of the ranking order of the subgoals as perceived by students. The cluster analysis mirrors the 4 areas of aims. The horizontal axis may correspond to the degree of autonomy experienced by students.

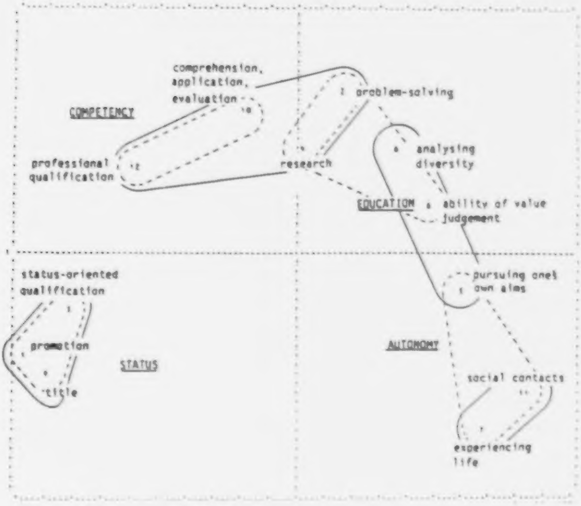

Fig. 1: 2-dimensional MDS-Representation of Expectations of Engineering Students (Schuntermann 1981) (N=55; Alienation Coefficient .16)

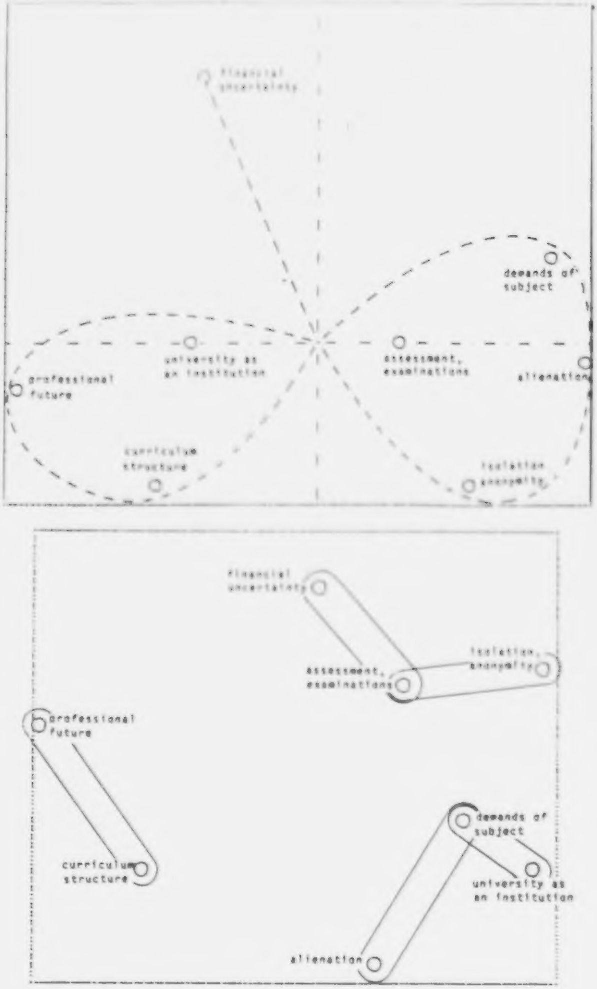
financial uncertainty
demands of subject
university as an institution
assessment, examinations
professional future
alienation
curriculum structure
isolation anonymity
financial uncertainty
isolation, anonymity
assessment, examinations
professional future
demands of subject
curriculum structure
university as an institution
alienation

Fig. 2: 2-dimensional SSA-Representation of Causes of Stress, Anxiety and Fears Perceived by First Year Students (Appel 1985)
Above: 1981/82 (Dragonfly-pattern); Below: 1983/84 (Archipelago-pattern)
(N>400; Alienation Coefficient .16)

It is well known that students carry fears as well as hopes. In a previous paper (Brandt, Sell 1985), we briefly referred to our research in students' problems. Here, we would like to emphasize how developments in students' perceptions have become visible in our project. Fig. 2 shows the result of a Smallest-Space-Analysis of correlations between students' responses to a questionnaire on causes of stress, anxiety and fears (Appel 1985). Twice, in 1981 and 1983, we asked more than 400 first year students at our university to answer this questionnaire. The changes of structures indicate that in 1983 more than in 1981, the financial uncertainty is correlated to fears of exams and anxiety about isolation; the university as an institution seems to be correlated to alienation and stress through subject demands. These changes reflect two developments within the university which took place between 1981 and 1983: firstly, students grants were reduced and in the same token, clearly linked to exam results; secondly, the intake of first year students into our university increased from about 3000 to about 4000 during the two years corresponding.

The discrepancies between hopes and fears which students experience influence the students' perceptions of their lecturers, and they are influenced by the lecturers' perceptions of the students. Hauprich and Gotter investigated these perceptions through in-depth interviews with a small sample of 18 students and 9 lecturers in the department of social science (Hauprich, Gotter 1985). They used two approaches to categorize the responses:

1. Following the well-known triangle suggested by R. Cohn, they defined the three main aims of Higher Education in social science as

   Involvement of Self
   Competency in Social Interactions
   Mastery of Subject (compare fig. 3)

The relative weight given by the respondents to each of these categories

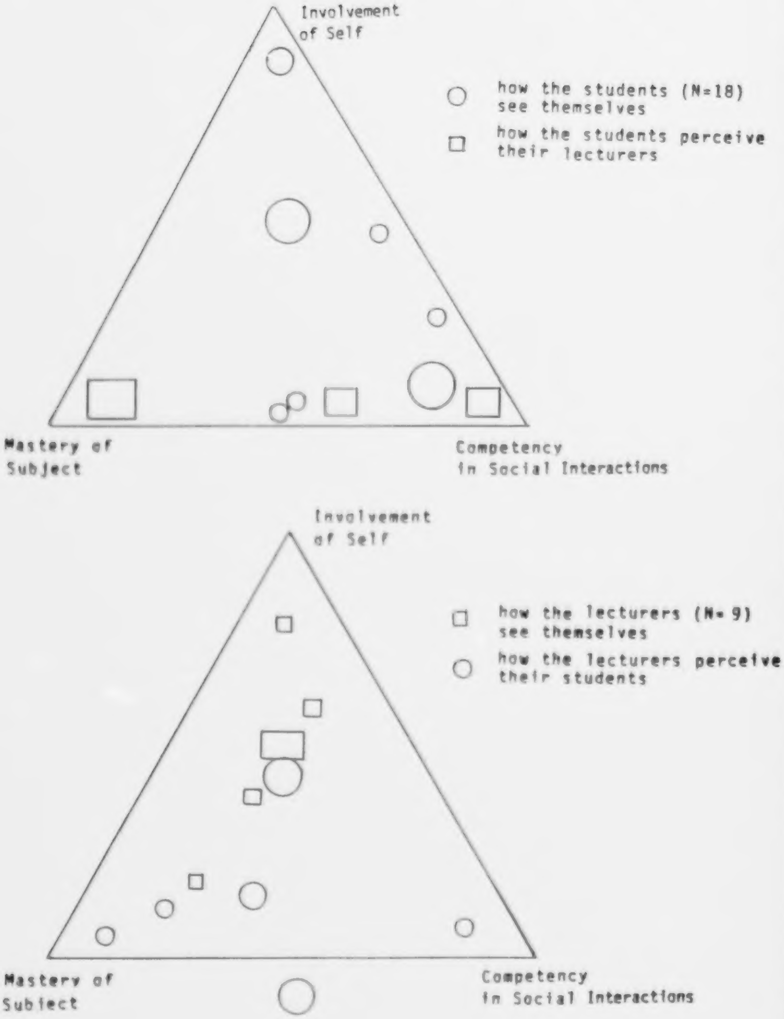

Fig. 3: Perceptions of Students and Lecturers of Social Science with Reence to the Main Aims of Higher Education (Hauprich/Gotter 1985)

is symbolized by the location of a square or a circle within the triangle: the size of the square or the circle corresponds to the number of respondents agreeing on the particular weighing. The diagrams indicate that students tend to desire involvement of self and competency in social interactions, as a preparation for demands of their future professional life. They see their lecturers as mainly concerned with getting the factual knowledge of the subject accross to them. The lecturers, however, seem to largely agree with their students on that personal involvement and competency in interactions are important - only they perceive their students as unable to come up to their expectations: in their opinion, students merely want to pass exams based on factual knowledge. (The circle below one of the triangles symbolizes the lecturers' responses about students who "do not know what they really want").

2. Hauprich and Gotter used the three dimensions (Boud, Pascoe 1978) of:

Involvement of Self
Learner Control
Correspondence of Learning Environment to Real Environment,

They categorized the responses of their sample of students and lecturers as shown in table 1. It indicates how little the self-perception of lecturers and the perception of lecturers' actions by students coincide.

Students perceiving their lectureres as	Lecturers perceiving themselves as	
1	7	creating involvement
4	5	encouraging learner control
2	7	relating learning environment to real environment
(N=18)	(N=9)	

Table 1: Students' perceptions and lecturers' self-perceptions

Several projects elsewhere asking similar questions have confirmed that in Higher Education, lecturers and students sometimes agree in theory on aims of education - but behaviour and acting of both groups do not match these aims.

There are not only the discrepancies between perceptions of students and lecturers to be taken into account in teaching and learning: the students live with discrepancies within their own personality. In 1981 Appel asked 400 students of mechanical engineering about their self-concept ('how do you see yourself?') and their auto-stereotype ('how do you assume to be seen by others?') (Appel 1985). The questionnaire contained 21 items.The responses possible were 'strongly - a little - hardly'. Table 2 represents the means. The t-test showed that for all but two items, self-concept and auto-stereotype are significantly different. It indicates that students of mechanical engineering tend to see themselves as quite different from how they assume to be seen as members of the group of engineers. They tend to describe themselves in terms which show them as 'normal human beings' while they seem to fear to be seen as 'detached, career-dominated, machine-like beings'. If students of different age are compared the results are surprisingly stable. Appel suggests different models to explain these discrepancies:

- the self-concept may reflect wishes and desires of students about their future profession and its image
- the dissonance caused by these discrepancies may lead to rejection of disturbing facts about the engineering profession or its role in society
- students who are likely to fail their engineering courses may tend to see themselves as not quite suitable for becoming an engineer.

For engineering students, engineers seem to be a negative reference group: 'I am not a typical engineer'. This holds particularly for students who are critical with regard to the role of engineering and of technological development in society at large.

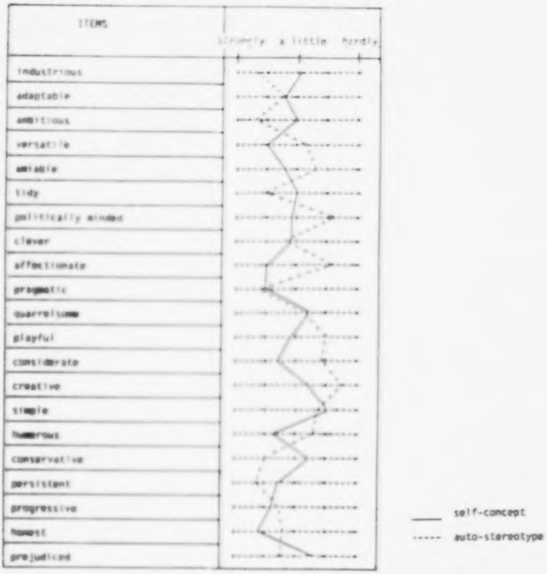

Table 2: Self-Concept and Auto-Stereotype of 400 Students of Mech. Eng. (Appel 1985)

These discrepancies have influence on the students' actions of studying. One of our research projects on actions of studying follows the approach of Thinking Aloud an its recall by means of video recordings (Heger 1986). Heger asked students to solve a problem of their engineering courses. During the recall phase, he asked them about their learning process as well as about themselves. Thus, Heger gained some insight into the students' perception of Being a Student and the Context of Studying.

Some of Heger's observations can be summarized as follow:

- The institution determines the context of studying; students largely experience it as forcing them to process factual knowledge through a surface-approach to learning (Marton, Säljö 1976) in order to pass exams: Heger calls these experiences the macro-view of studying.
- The student as a person determines the space left to develop autonomy within this context; his/her desire and attempts to solve problems through a deep-approach to learning; his/her experience of satisfaction through subject-oriented commitment:Heger calls these experiences the micro-view of studying.

Heger furthermore observed that students do not necessarily find satisfaction through successfully passing exams: they feel they have not learned enough - they have been let down by the university. It needs a certain degree of self-confidence, detachment of mind and emotional stability to bear these dissonances. These qualities rarely develop out of mere actions of studying. Successful students have to find emotional satisfaction in addition to and quite apart from, subject-oriented activities: through their peer groups, hobbies, art and music etc.

Our research into students' actions of studying has impact on our strategies to improve teaching and learning, i.e. on our courses to improve the ability to study as well as on our staff development programs. But of course, we are well aware of the limitations of transferring our knowledge about students into these programs:

- In our student courses, students experience ways to deep approaches to learning, and to develop complex and critical or dialectic approaches to thinking; they sometimes perceive these experiences as working against what is needed to pass exams.

- In our staff development programs, we find very little willingness among our participants to reduce the amount of factual knowledge which is to be taught per term - the main obstacle to any enhancement of autonomy or involvement of self of students.

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THE CONCEPT OF RESPONSIBLE FREEDOM TO LEARN THROUGH SELF-DIRECTED STUDY

Irene C. Brower
Southern Connecticut State University

> **Most teachers are at pains to place in the earth plants instead of seeds and trees instead of shoots....The schools have not taught their pupils to develop their minds like young trees from their own roots....**
>
> Comenius in the 17th century (in O'Neill, 1969).

Comenius points to the enduring issue of the mission of educators. Do we equip students with "wings to soar" and an "enduring learning process" or do we unintentionally launch them with "crippled wings?" This paper's thrust is a presentation of graduate social work students' perspectives and evaluation of the educational "fruits" derived from sharing traditional teacher perogatives in an independent learning project (ILP). Within the limits of the course objectives, students determined their learning goal(s), strategies, resources/tools, and form of demonstration of a synthesis of outcomes. They contracted for a grade. The instructor's roles were catalyst, facilitator, and consultant. The Union for Experimenting Colleges and Universities, an accredited institution, offers baccalaureate and doctoral programs rooted in the concept of responsible freedom to learn through self-directed study. The Union's teaching/learning process provided a framework and model for the ILP.

The root source for the concept of responsible freedom to learn is the inherent inalienable gift of the freedom of the human spirit. Its handmaiden gift is responsibility -- i.e. "respons-ability" (Frankl, 1969). All human beings are endowed with and empowered by these dual spiritual gifts of "freedom/respons-ability" to choose the kind of person they will be/become, their attitudinal responses to all all limitiations/ conditions, to discover knowledge/meanings, and to expand/limit their potential for learning/growth (Combs, 1963, Frankl, 1969, Rogers, 1969, and Maslow, 1971). Social worker Maas (1970) defined responsibility as a "trust" or "duty" implying our accountability/capability of fulfilling the obligation/trust -- the hallmarks for professional and leadership positions.

The enduring debates in the literature about education's mission seem to boil down to two polarized world views. On the one hand, there is the view that human beings are not free but deterministic, mechanistic, driven, and controlled (Descartes, Newton, Darwin, Freud, Skinner, and their disciples). At the other end of the spectrum are the views of Tagore, Rogers, others previously cited, and their disciples who contend education's mission should be rooted in the inherent freedoms that emanate from our spiritual dimension. McGregor's (1960) Theories X and Y also reflect these polarities. Perhaps a more wholistic view of human beings would be a synthesis of the two views. In general, the traditional teaching/learning process has tended to give more weight to the mechanistic world view.

The strongest contemporary advocate of responsible freedom to learn is Carl Rogers (1969) who documented his own extensive research and that of others. Combs (1965) did the same for perceptual psychology and Maslow (1971) passionately argued for education to foster self-discovery of meanings and to view us as whole human beings as the means of developing more self-actualized people.

Self-directed learning embraces the interwoven concepts of responsible autonomous learning and collaborative participation -- in goal setting, problem-solving, decision-making, implementation, evaluation, and consequences. Work with peers is an option. Abercrombie (in Imrie, 1984) concluded these concepts reflect the changes needed in teaching methods. Research findings of Lewin, Allport, Likert, and others (in Bennis, Benne, and Chin (1961) affirm that the outcomes of the concepts are high motivation, qualitative and quantitative productivity, and significant growth. Third World adult educator Paulo Friere's liberation theories have un-leashed the potential and fostered rapid learning, high motivation, and involvement of undereducated adults

(Brigham, 1977). Brigham contends Friere's theories have relevance for social work education. Brown, Katz, and Waldron (1976) concluded students are more likely to value client self-determination and Bloom (1985) proposes that they will be better prepared for autonomous professional practice.

RESEARCH DESIGN

This survey's broad purpose was to examine student perspectives and their evaluation of the concept of responsible freedom to learn through the ILP. The specific objectives were to identify the educational outcomes and to describe the experience of the students in the process.

Applied research in the form of program evaluation was the selected methodology. A questionnaire was mailed to all students who experienced the ILP in the Fall 1984 and Spring 1985 semesters. There were no other sampling criteria. The content validity of the 62 item structured instrument was increased by use of the literature for educational objectives. Nine response categories on a Likert-type scale further reduced bias and minimized writing. Elaboration was invited by use of "Other" and space for additive comments.

RESULTS AND DISCUSSION

Space does not permit display of results in their entirety. All data will be available in a hand-out. Significant findings are presented.

Demographic Data. The return rate was 63.7% (28). The 25 (89.3%) female and 3 (10.7%) male respondents were 21-50+ years old. The gender and age range reflect the social work and university student body. They also reflect the trend toward a growing number of more mature students -- 39.3% (11) were 21-29, 35.7% (10) were 30-39, 17.9% (5) were 40-49, and 7.1% (2) were 50+.

Students had considerably more prior experience than anticipated.

Educational Level	**Self-Directed Assignment**	**Independent Study Credits**
Elementary	10.7% (3)	7.1% (2)
Secondary	50.0% (14)	25.0% (7)
Undergraduate	71.4% (20)	64.3% (18)
Graduate	71.4% (20)	71.4% (20)

All students had at least one prior experience. Slightly more had more undergrad via self directed assignments than independent study course credits. There were no significant differences by age range. A few students had extensive experience at all levels while some had only one prior experience. More extensive research is needed to interpret the meanings.

Educational Outcomes. The educational fruits of the ILP are those affirmed and espoused by previously cited researchers and advocates of the concept.

100% (28) students reported that they
- . gained meaningful insights/learnings from the decision-making process
- . felt they learned through self-discovery
- . felt their selected learning tools/resources were interesting and fruitful
- . felt good about themselves and their accomplishments
- . assumed responsibility for their own learning/growth
- . strived for academic excellence
- . learned and grew from mistakes

92.8% (26) to 96.7% (27) students reported that they
- . felt their learning/insights/growth had significant meanings for them and these were more significant than if the instructor had made the decisions
- . felt their form of demonstration further contributed to learning/growth
- . sharpened skills in practice, analytical/creative thinking, and flexible use of knowledge

89.2% (25) felt retention of learning was high (2 felt unsure, one disagreed)

Comparison of General Educational Outcomes of ILP, Papers, and Exams. These results may/may not be somewhat misleading. Some students felt confused by the scoring or by some statements and/or did not respond to every item. Some may have given views of papers/exams in this course vs. those in general. The instructor designs papers and exams that also maximize freedom to learn. The percentages displayed are based on the full sample of 28.

The mean percentages of positive responses to all items in this component were 90.4% for ILP, 62.5% for papers in general, and 44.0% for exams in general. For all but two items this differential in the mean percentages for ILP, papers, and exams was a consistent pattern. Deviations will be noted in the data display for the ILP. Complete data will be available in a hand-out.

96.4% (27) students felt the ILP
- . reflected the concept of responsible freedom to learn. (82.1% (22) thought papers and 39.2% (11) thought exams also reflected the concept)

- maximizes opportunity to demonstrate what they know, can do, and [illegible]
- provides a framework to guide students toward "discovered" vs. "[illegible]" knowledge and meanings
- places the focus on the "student and learning" vs. "teacher and teaching"

92.8% (26) students felt the ILP
- requires the teacher to be a "facilitator of learning through self-discovery" vs. "transmitter/interpreter of knowledge"
- fosters awareness of the reality of "alternative acceptable answers, views, and approaches" vs. "one right answer, view, approach"
- fosters development of skills in making connections, in understanding "wholes and processes" vs. "fragmentation" and "problem-solving" vs. "knowledge of facts"

89.3% (25) students felt the ILP
- demonstrates respect for students as responsible adult learners capable of self-directed inquiry/learning (82.1% (23) felt papers in general and 39.3% (11) felt exams in general also demonstrated this.)
- provides a learning climate conducive to risk-taking without fear or worry
- fosters development of skills in synthesizing knowledge, insights, and learnings; analytical/creative thinking; decision-making process; and integration of theory/practice
- fosters development of "flexible use of knowledge" vs. "storage of facts"
- fosters teaching, learning, and evaluation as two-way processes

85.7% (25) students felt the ILP
- views the student as an "individual whole person" actively engaged in learning vs. a "generalized, fragmented recepticle of knowledge"
- minimizes academic stress and burn-out. (35.7% (14) students felt papers and exams in general accomplished this)

82.1% (24) students felt the ILP results in high retention of learning and motivates students to strive for academic excellence (one did not)

The data show that general educational fruits are more likely to be attained through an ILP than by papers and exams in general. Further research is needed to examine the nature of the papers and exams that do/do not foster these outcomes and fruits derived from them. Students seemed to give support to findings of medical education research reviewed by Clemenger (1970) that pointed to the need for diverse evaluative tools that also match the skill and knowledge to be evaluated as well as offer options for individual styles.

85.7% (24) felt ILP should be
- an option students could select in lieu of a paper or exam
- a frequent experience in some but not all courses provided students experience at least one ILP prior to graduation

57.2% (16) the only type of assignment
53.5% (15) required along with papers and exams

Some students may have felt unsure since they agreed with all options.

The Experience of the Students in the Process. In general, the overall experience of the students was highly positive but not in all aspects.

On the one hand,

96.4% (27) students liked the freedom to direct their own learning and the responsibility for decision-making, felt highly motivated, and felt they were working for themselves vs. an assignment and grade
92.8% (26) did not feel overwhelmed but rather they felt excited, challenged, confident, and competent to direct their own learning
89.3% (25) felt free to be creative without fear of penalty
75.05% (21) did not experience non-productive anxiety
71.4% (20) found it relatively easy to include risk-taking in the project

On the other hand,

85.7% (24) needed reassurance from the instructor that there was no one right way/answer/approach or set outcomes, and/or "it is OK if I made but learned from mistakes," or "only made progress toward my goals"
78.6% (22) needed facilitative help from the instructor to narrow down to the "tastiest morsal;" differentiate objectives, strategies, resources, and form of demonstration; and to develop a concise/coherent proposal
60.7% (17) felt they understood the ILP yet still felt unsure they did while 39.7% (11) needed repeated clarification and reassurance they did understand
46.4% (13) found the decision-making process more difficult than anticipated and 32.1% (9) wished at times the instructor had made the decisions
25.0% (7) experienced the same anxiety they experience with all assignments

Additive comments reflect those of students cited by Rogers (1969).

- **I can't praise my experience enough. I will certainly consider a Ph.D. program in such a style.**
- **I thought the ILP very successful. I can think of no better way to encourage learning. A person who couldn't learn from an ILP wouldn't be equipped to learn from quality learning anyhow.**
- **I really appreciate having had this perspective of learning. It did more for me than any rote learning experience**!

Although some students experienced discomfort in the initial phase the data indicate that they had highly positive feelings about the process/outcomes after completing the proposal. The data point to the aspects of ILP where students are most likely to need facilitative help from the instructor.

Instructor Attitudes and Behaviors. In their evaluation of the instructor's attitudes/behaviors all 28 students affirmed that the instructor

- was patient in reiterating and clarifying the ILP
- had empathic nonjudgmental understanding of student confusion
- facilitated their range of options relevant to their needs and goals
- was available for consultation when needed
- respected students as responsible capable individuals
- behaviorally/attitudinally showed a genuine commitment to the concept

These qualities are similar to those cited in [illegible] effective teaching in general (Rogers, 1969, Combs, 1982, and others).

Grade Contracting Process. The process objectives were to [illegible], foster development of evaluation skills, and to stimulate awareness that the two-way teaching/learning process involves a collaborative relationship. The data indicate these objectives were attained by a large majority of students.

92.8% (26) liked being given the responsibility for grade contracting and
  felt they met the criteria for the contracted grade (one felt unsure)
85.7% (24) felt the process helped them to sharpen skills in evaluation
78.6% (22) felt the process freed them to focus on learning vs. worry about
  grades and made them feel equally responsible with the instructor for
  evaluation of their learning and growth
28.5% (8) found the process more difficult than anticipated

These responses were similar to those of Hayes (1985), Bishop (1994), Brown, Katz and Waldron (1976), and others whose students experienced a high level of satisfaction from student/faculty collaboration and/or self-directed learning.

Perceived Barriers to Acceptance of the Concept. The students' responses to the ILP were highly favorable. However, other data pointed to some barriers to acceptance of the concept that might be held by some faculty and students.

Anxiety, Anger, and Grading. Grade anxiety was not reduced for about one-fourth of the students. Although students did not experience anger toward the instructor about any other aspect of ILP 28.5% (8) felt anger because they were not fully trusting that the instructor did not have hidden norms for an A grade. Jones (1985) and Poon (1995) of the Chinese University at Hong Kong and Faw (in Rogers, 1969) also found that a change in norms that go with more freedom/responsibility evoke anxiety and anger in some students.

Conditioning, Change in Norms, and Lack of Preparation. The students pointed to possible barriers to acceptance of the concept by some students and faculty that may illuminate the phenomenon.

82.1% (23) felt they had developed coping skills to get A grades and were
  conditioned to rote learning and teacher prescribed [illegible] and exams
75.0% (21) felt students dislike norm changes [illegible]

71.4% (20) felt most students are unprepared for self-directed study.
7.1% (2) commented, "Too many teachers are too high and mighty to use such a concept -- perhaps because they are insecure."

All 28 students felt that ILPs should be a frequent experience in all educational levels starting in kindergarten.

Academic Excellence. Perhaps the greatest fear is that of "watering-down" academic standards. Only one student felt standards set were not high enough. There are three points of monitoring for standards in the ILP. The instructor and student collaborate on the proposal, grade contracting based on given criteria, and evaluation of outcomes. All students felt they strived for academic excellence, one felt unsure, and 27 felt they met standards for the contracted grade. On the other hand, 92.8% (26) students thought the concept has "productive outcomes for most students but not all because some are lazy, or have low standards, or like to be led." This suggests the primary barrier may be a lack of trust in peers/instructors. Traditionally, students are placed in competition with others by normative-referenced evaluation whereas the ILP is criterion-referenced and individualizes work and outcomes.

Other Barriers. Additive comments pointed to other possible barriers.

> **Students have more on their minds than self-directed learning...It is suitable for mature adults but those just out of high school may have difficulty handling that much freedom...With the high cost of education many students may feel they aren't getting what they paid for if they have to do all the learning by themselves.**

The ILP is structured to address these issues because it individualizes the student and the instructor starts "where the student is." Self-directed learning is not synonymous with a teacher laissez-faire role. On the other hand, a lazy uncommitted instructor might be inactive or some instructors may set low standards but these are equally undesireable for traditional teaching.

Travigliano's (1985) research led him to conclude independent study is appropriate for mature adults. Other research and this study's findings suggest this is not true in general but students who tend to be anxious and/or need rigid structure may experience initial discomfort and require more help from the instructor. Only one student tended to be negative.

Expert Learners. Student performance and results of this study suggest that they were expert learners as identified by Van Rossum and Hamer (1985). The data do not validate whether they entered ILP with these traits or if they developed them in the ILP process.

Academic Stress and Burn-Out. Apathy, grading, and unpreparedness for college work were identified by Meléndez and de Guzmán (1983) as the student sources of faculty stress/burn-out. The results of this study indicate that ILP minimized stress for a majority of students. The researcher's experience was spiritually rewarding. When the teacher and students use their spiritual gifts of freedom/respons-ability in the circular process of giving/receiving in the teaching/learning process the spiritual fruits are meaning, purpose, and joy -- all essential in the prevention of stress/burn-out.

The data revealed that 96.8% (27) students felt the concept significantly improves the quality of the teaching/learning process in higher education and ensures more fruitful outcomes while one felt unsure. Also, 89.3% (25) felt the concept addresses a major concern of college students and two were unsure.

CONCLUSIONS AND SUMMARY

The highly positive results of this study affirm the findings of other cited research and support the three broad conclusions that:

(1) the concept of responsible freedom to learn through an ILP generates educational fruits that better equip them for coping and enhancement of the quality of life in a changing paradoxical world in which knowledge is in a dynamic process of evolvement and refinement

(2) students can be trusted to responsibly learn, grow, and strive for high academic standards when given the opportunity for responsible freedom to learn through self-directed study

(3) the ILP is a generalizable fruitful teaching/learning tool for implementing the concept of responsible freedom to learn.

The concept is generalizable because all disciplines and courses at every level have at least one objective that can be met through self-directed study and criterion-referenced evaluation. The ILP S framework is flexible enough to individualize a course, students, and faculty.

The results pointed to the need for further research to examine

- the concept in relation to reduction of academic stress and burn-out
- the concept in relation to expert learner skills
- self-directed learning in all educational levels
- papers/exams that foster the general and unique educational outcomes
- possible barriers to acceptance of the concept.

The concept of responsible freedom to learn through self-directed study nourishes and responds to the human needs of the spirit and fosters creative and fruitful use of the gifts of the spirit of both students and faculty.

"There are many freedoms..the most fundamental one is the freedom to learn"
Berends (1983, p. 176).

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STUDY SKILLS
LOCUS OF CONTROL AND ACHIEVEMENT

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Many universities and colleges are enrolling a large percentage of "high-risk" students whose educational accomplishments show a lack of achievement well below that of the past decade's "typical college student" (Roueche & Mink, 1976). In addition, many "high-risk" students have difficulties in motivating themselves to perform the work and study required for successful academic achievement in higher education. This lack of motivation might well be due to the attitude of the students that they are not in control of their lives (Roueche & Mink, 1976).

One personality variable related to the control one has over one's life is locus of control. Locus of control has been defined as a personality variable which describes whether individuals accept personal responsibility for what happens to them (internal control) or attribute responsibility to forces outside their control (external control) Rotter, 1966).

The importance of locus of control for "high-risk" students is apparent. If students do not see the connection between their studying behavior and subsequent achievement, as externals may not, they will possible learn less (Roueche & Mink, 1976).

There has been substantial research investigating the relationship between locus of control and achievement in college students (Hjelle, 1970; Warehime, 1972; Massari & Rosenblum, 1972; Brown & Strickland, 1972; Duke & Norwicki, 1974; Bass, Ollendick, & Vuchinich, 1974; Golmore & Reid, 1978). The results of these studies, though mixed, tend to support a positive relationship between internality and academic achievement with sex being a relevant variable.

Nowicki and Duke (1974) concluded that locus of control might be a differential predictor for males and females with regard to achievement. They suggested the use of mediational variables to explain differences between the sexes in achievement.

Nord, Connelly, and Doignauet (1974), Lefcourt (1976), Bar-Tal and Bar-Zohar (1977), and Yoch and Nowicki (1977), in noting that conclusions from locus of control and achievement research are somewhat indefinite, suggested that researchers take into account additional variables related to achievement.

Mediational variables related to academic achievement (defined as grade-point average) might include ability, luck, effort, and difficulty of the college program (Weiner, Heckhausen, Meyer, & Cook, 1972). Ability is seen as internal and stable; effort as internal and variable; difficulty of program as external and stable: effort as internal and variable: difficulty of program as extern and stable; and lucks as external and variable.

If a further variable related to knowledge of study skills is taken into consideration, there could be an investigation performed which if examined might show a relationship among locus of control, study skills knowledge, for example, may be related to externality and hence subsequent lack fo achievement. Related research suggests that study skills knowledge is potentially an important factor in the locus of control-academic achievement relationship (Porciuk & Breen, 1974; Bass, Ollendick, & Vuchinich, 1974; Blustein & Lester, 1979).

The purpose of this study was to examine the following questions: Is there a relationship in "high-risk" male and female students between: (a) locus of control and academic achievement? (b) locus of control and general achievement? (c) study skills knowledge and academic achievement? (d) study skills knowledge and general achievement? (e) locus of control and study skills knowledge? (f) the mediational variables and academic achievement? (g) the mediational variables and general achievement? (h) the mediational variables and study skills knowledge? (i) the mediational variables and locus of control? Therefore, this study attempts to combine a number of elements in an effort to decode some of the variables associated with achievement in "high-risk" students. If trends are found in this study, the data could provide keys for working with "high-risk" students and for subsequent research.

METHOD

Subjects

Seventy-six male and forty-nine female students from STudy Techniques for College Courses served as subjects (Ss). These students are enrolled in this course through academic advisement. All Ss volunteered to participate in the research. Grade-point averages (GPA) and SAT scores were obtained from the University Registrar.

Measures and Procedure

All subjects were administered the Effective Study Test (EST: Brown, 1964), the Adult Nowicki-Strickland I-E Scale (ANS-I-E: Nowicki & Duke, 1974), and a printed sheet on which they assigned the percentage of ability, effort, luck, and difficulty of the college program that they felt contributed to their GPA

RESULTS

To ascertain the strength of the relationships among the EST and locus of control, SAT-V, SAT-M, and GPA, Pearson-product-moment correlations were performed. The correlations among the variables for both males and females are described in Table 1.

As can be seen from Table 1, there were some differences in results of the correlations for males and females. For locus of control and the EST scales, there was a significant correlation for SRO and SSO for males but not females. There were significant correlations for SWB for females but not males. For GPA and and EST scales, there was a significant correlation for SWB and SEB for males but not females. There were significant correlations for SRO, SSO, and SRB for females but not males.

For SAT-M and EST scales there was a significant correlation for SRB for males but not females.

To ascertain the strength of the relationship among locus of control, GPA, SAT-V, and Sat-M, Pearson-product-moment correlations were performed. For males, the results indicate a significant degree of association between locus of control SAT-V and SAT-M. For females, there was a significant degree of association between locus of control and SAT-V.

There was a difference between males and females in this series of correlations. Whereas there was a significant correlation between locus of control and SAT-M for males, there was not for females.

To ascertain the strength of the relationships among the mediational variables and EST, locus of control, SAT-V, SAT-M, and GPA, Pearson-product-moment correlations were performed. For males, the results indicate no significant degree of association between ability and the EST, locus of control, GPA, SAT-V, and SAT-M. For females, there was a significant negative relationship between ability and SSO.

For males, there was a significant positive relationship between effort and the SRO scale of the EST and a significant negative relationship between effort and locus of control. For females, there was a significant negative relationship between effort and locus of control.

For males, there was a significant negative relationship between luck and all the EST subscales. There was a significant positive relationship between luck and locus of control and a significant negative relationship between luck and and SAT-M.

For females, there was a significant positive relationship between luck and the SSO subscale and a significant negative relationship between luck and SAT-m.

For females, there was a significant positive relationship between luck and the SSO subscale and a significant negative relationship between luck and the SEB subscale.

For males, there was a significant positive relationship between difficulty of program and locus of control. For females, there was a significant negative relationship between difficulty of program and GPA.

DISCUSSION

Because of the low-to-moderate nature of the correlations in this study, the results must be interpreted with caution and the following discussion viewed as tentative.

Locus of control and study skills knowledge

This research lends moderate support for males, and to a lesser degree for females, that the more externally-controlled a person is the less knowledge of study skills she/he possesses. Thus, locus of control, along with measures of scholastic aptitude, may be a helpful measure in selecting students for study skills courses.

For males, the greater the degree of being externally controlled, the less the knowledge they possess with regard to their reality orientation to college (e.g., thinking that the average freshman can master effective textbook reading procedures in one hour of concentrated practice). Also, the greater the externally controlled a male is, the less his knowledge of study organization skills (e.g., thinking that, if possible, one should concentrate all classes on either Monday-Wednesday-Friday or the Tuesday-Thursday-Saturday series). The greater the degree of externality males possess, the less knowledge they have about examination-taking skills (e.g., thinking that essay questions should be answered in order without skipping so as to insure the best use of examination time).

It can be concluded that externally-controlled, high-risk males may benefit from extra tutoring in the areas of developing a realistic orientation to college and in learning study organization and examination-taking skills. Counseling with regard to helping these students see the connection between these study skills and academic achievement, also, may be indicated.

For females, the greater the degree of being externally-controlled the lower their knowledge of writing skills (e.g., thinking that one's lecture notes should be written in the narrative style rather than in outline form). Also, the greater the externality, the less the knowledge of examination-taking skills. It can be concluded that externally-controlled females can benefit from extra instruction and tutoring in writing behavior skills such as note-taking and in examination-taking skills.

Knowledge of study skills does not necessaryily imply their use by students. However, the significant correlations between study skills knowledge and GPA, SAT-M lend support for the idea that students knowledgeable in study skills tend to use them and further supports the use of study skills courses in college.

GPA and Study Skills Knowledge

There is a positive relationship between writing behavior skills and GPA indicating that for males there is a strong relationship to skills such as note taking and their subsequent academic achievements. As expected, there is a strong positive relationship between examination-taking skills and GPA.

For females, there is a strong relationship between having a realistic orientation to college and GPA, a knowledge of study organization skills and GPA, and reading behavior skills and GPA.

For females, it appears that extra instruction in reality orientation, study organization, and reading behavior are the most important skills for enhancing their GPA; while for males, their writing-behavior skills and examination-taking skills are most important in enhancing their GPA. Again, study skills courses may well provide a unit on the relationship of study skills to college success, and on how this is related to internal behavior.

Results also support the concept that students with a low predicted grade-point average may benefit from being placed in a study skills class.

SAT-M, SAT-V, and Study Skills Knowledge

As expected, there was a significant relationship between study skills subscales and SAT-M and SAT-V scores for both males and females. The higher the SAT-V or SAT-M score, the greater the degree of study skills knowledge. This finding supports the usage of SAT scores for placement of students in study skills classes.

Locus of Control and GPA

There was no significant relationship between GPA and locus of control for either males or females. These results are in conflict with Phares (1976) who suggested that internals achieve to a higher degree than externals and with Duke and Nowicki (1974) who found a significant negative relationship between externality and GPA for males and a significant positive relationship between externality and GPA for females.

Locus of Control and SAT-V, SAT-M

For males, there was a significant negative correlation between locus of control and SAT-V and locus of control and SAT-M, indicating that the more external a male is, the lower are his SAT-V and SAT-M scores. Results suggest that general measures of achievement like the SAT may be more valuable than GPA in identifying students who may need counseling for poor academic achievement.

For females, there was a significant negative relationship between locus of control and SAT-V, indicating that the more external a female, the lower her SAT-V score. These results also conflict with Duke and Nowicki's (1974) contentions concerning women and achievement but support their contention concerning the general positive relationship between internality and achievement.

Mediational Variables and GPA

For males, it appears that the less weight of their GPA they attribute to luck, the higher their level of study skills knowledge. This relationship implies that male students who attributed high levels of luck to their grade-point average may benefit from counseling to help them to see the connection between study skills knowledge and their achievement. It also suggests that these students might well benefit, in addition, from placement in study skills courses.

For males, it also appears that those who have more realistic attitudes about the academic demands of college are more aware of the significant effort that is demanded of them. As anticipated, the higher a male's external scores, the more likely he is to place more weight on luck and difficulty of program and less weight on effort. This implies that the mediational variables of effort, luck, and difficulty of program are related to locus of control, whereas perceived ability may not be. That as SAT-M scores increased, percentage of luck decreases, may imply that males with high SAT-M scores may have better problem-solving skills than those with lower SAT-M scores and hence are better aware of the relationship between problem-solving skills and obtaining the correct answer to math problems.

There were not as many significant relationships for females as males. Contrary to what might be expected, the more knowledge females had of time management and scheduling organization (SSO), the less they weighted ability and the more they weighted luck as accounting for the GPA. This may suggest that "organized" females see their organizational abilities as part of a sex-typed conventional role and are not aware of the relationship of time management and achievement.

As for males, females with high examination-taking, study-skills knowledge tned to view luck as not highly related to achievement. This implies that women aware of how to take tests see clearly that luck is not connected to how they take tests.

The higher the women's GPA, the less they attributed it to difficulty of the program. This may imply that high achieving women realize that they have an effect upon their GPA.

Recent research has show sex differences in research of locus of control (Chandler & Dugovics, 1977) including a positive relationship between externally-controlled females and achievement for females but a positive relationship between internally-controlled males and achievement for males (Duke & Norwicki, 1974). Duke and Norwicki (1974) have hypothesized that "college-aged females are more likely than males to adopt an expressed external orientation to be congruent with the expected female cultural role of passivity (p. 265). These authors concluded that locus of control might be differentially predictive for males and females with regard to achievement. The present study lends little support for this contention.

As anticipated, the more external a woman is, the less she attributes effort to having a significant impact on her GPA. This implies that external females are not necessarily aware of the fact that their efforts are related to GPA and that they migh well benefit from counseling in this area.

In conclusion, this correlational study found statistically significant relationships among study skills, locus of control, achievement variables, and the mediational variables of ability, effort, luck, and difficulty of the college program. Further research utilizing inferential statistics is in order. Interested researchers are encouraged to use locus of control and study skills inventories when investigating academic achievement of "high-risk" students.

TABLE 1

Correlations of Subtests of Effective Study Test with Locus of Control, GPA, SAT-M, SAT-V for Males and Females

	Male (N = 76)				Female (N = 49)			
	Locus of Control	QPR	SAT-M	SAT-V	Locus of Control	QPR	SAT-M	SAT-V
EST Scales								
SRO	− 28**	07	23*	48***	− 19	51***	46***	33*
SSO	− 23*	− 01	31**	26*	− 01	42***	24*	33*
SWB	− 17	22*	39***	44***	− 37**	19	32*	36**
SRB	− 15	17	21*	30**	− 13	25*	17	35**
SEB	− 20*	34***	44***	49***	− 43***	04	31*	25*
TSE	− 38***	19*	42***	53***	− 34***	43***	45***	55***

*p < 05
**p < 01
***p < 001

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THE "GOOD STUDENT" AS PERCEIVED BY UNIVERSITY STUDENTS

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The research of instruction in higher education has mainly dealt with evaluation of instructors, the quality of university teaching and the students' learning processes (Centra, 1979; Seldin, 1984). However, little has been done to investigate the issue of the "good student" as a consumer of the services provided by the university.

Instruction and its quality are two of the most significant outputs of higher education. Transmission of knowledge and information, social values and professional training are involved. The effectiveness of this process is undoubtedly affected by the human involvement in it, namely: students-instructors, their interaction and mutual expectations.

Effective instruction would be achieved not only through subject matter, method of instruction and administration, but through human interaction as well. The interpersonal interaction is a factor of formal and informal communication which is based on mutual understanding of both instructor and student (Ben, 1972). Communication enables transmission of information, opinions and values as well as self-understanding and understanding of others. (For example, the instructor gets feedback of the quality of his work and the students, of their achievements.) Therefore, the quality of the formal process of teaching versus achievements is directly related to the quality of the interpersonal interaction.

It is not unlikely that the quality of the interpersonal interaction is affected by the expectations and opinions of those involved. This is the Attribution Theory in social psychology (Kelley, 1972). Three factors are involved in this theory: the one who perceives: instructor or student; the one who is perceived: instructor or student; and the situation in which it happens. The mutual perception influences the way one transmits one's message and behavior to the others. In our case, the student relates to the teacher, the instruction and the university.

In previous studies we dealt with the first factor of the process which is the students' and instructors' perception of the "good professor." We found a disparity between those groups. This finding undoubtedly has an impact on the quality of instruction (Miron, 1985). However, we have not yet investigated the second factor of the process, namely, the student as a consumer of academic instruction and how he is perceived by himself and his instructors.

The purpose of this study is to answer the questions: "What is the Israeli student's conception of the 'good student'? and What is the student's self-image?"

Method

Sample

The sample under study consisted of 416 undergraduate and graduate students in the School of Education at the Tel Aviv University.

Instrument

Fifteen characteristics of a "good student" were presented in a questionnaire. From these the student was asked to choose the four most important traits. These characteristics relate to two aspects: The student's potential (talents and intellectual curiosity) and the student's actual behavior. These aspects help us to create three images of the "good student."

1. The talented and intellectual--has critical and analytical ways of thinking, and who differentiates between the important and unimportant material he studies.

2. The diligent and conformist--who never misses a class and is always prepared.

3. The one who "gets by"--who achieves good grades without too much effort. This student tries to get acquainted with the instructors.

The list of fifteen traits in the questionnaire is based on an "open" question. The question was presented in one of the courses of Measurement and Evaluation at the School of Education prior to the study. Information such as gender, year of schooling, motives, and intentions of further academic studies, and self-definition of themselves as students were included. We wanted to examine how different groups of students conceive of the image of the "good student."

Results

How do students conceive of a "good student?" The four important characteristics of a "good student" selected by the students are presented in Table 1.

Insert Table 1 about here

The figures in the table indicate a tendency on the part of the students to attach relatively great importance to traits related to the talented-intellectual student. The four qualities which received the highest number of choices: were: (1) Critical and analytical thinking, 17.6% of all choices; (2) The one who applies previous learning to new material, 14.7%; (3) The one who differentiates between important and unimportant material, 13.4%; (4) Intellectual curiosity, 12.0%. In addition, characteristics concerning the student's diligence such as: good memory, familiarity with the material were mentioned. Responses to traits concerning the student who achieves good marks without too much effort and who tries to socialize with instructors were almost nonexistent.

It seems that the "good student" is conceived of as the talented and intellectual one firstly. Secondly, he seems to be diligent and a conformist. The "good student" does not seem to be the one who "gets by." No significant differences were found in the conception of the "good student" according to gender, motives and intentions of further academic studies. However, when we examined our findings according to year of schooling (freshman, sophomore and senior, graduates) slight differences were noted. Freshman students tend to see the "good student" not only as talented but diligent too, with relatively high frequency. Most of the differences were found among the students whose definition of themselves as students were different. We compared two extreme categories: (1) Students who define themselves as excellent or very good; and (2) Students who see themselves below average. (The analysis relates to those traits chosen most frequently.)

Insert Table 2 about here

It seems that students who define themselves as excellent or very good emphasize traits like intellectual curiosity, analytical thinking, and the ability to differ between significant and insignificant material. On the other hand, characteristics like familiarity with material and good memory are frequently chosen by students who define themselves below average. They grade intellectual curiosity in the third place, while motivation for higher achievements is mentioned only in the end of their list.

Discussion and Conclusions

The perception of the "good student" is based on his potential to high intellectual achievements, while qualities like conformism and diligence are of secondary importance. The "good student" is obviously not the one who "gets by," and who gets good results without much effort. Students' perception of the "good student" was not affected by difference of gender, motives and intentions of further academic studies. It is apparent that the perception of the student is quite unanimous. Yet there is a difference of opinion between freshman students and sophomores and onward. It could very well be since freshman students have not yet internalized the academic norms. Therefore, they tend to see the "good student" not only as talented but diligent too. The most differences were found among groups of students who define themselves as students differently. The "excellent" students perceive of the "good student" as the talented one while those below average tend to perceive the "good student" as the diligent one. It is quite possible that the "excellent" students are closer to the academic establishment in their ellitistic perception.

It is not uncommon to say that there is a stereotyped tendency of the image of the "good student." In this perception there is probably an influence of the academic norms since students tend to think about what is expected of them or social desirability. Students' perception of the "good student" is quite similar to instructors' perception of the "good professor", since instructors see the "good professor" as one who is able to arouse intellectual curiosity and develop ways of thinking (Miron, 1985).

Our present study is part of a series of researches which are based on the Interpersonal Interaction and the Attribution theories (Ben, 1972; Kelley, 1972). Its conclusions may contribute to the understanding of students' behavior towards their roles, to the understanding of the instructors' work and to the effectiveness of higher education instruction.

These conclusions must be treated with extreme caution, since the matter was investigated with regard to a rather small sample, in one school within the university.

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Table 1

Distribution of Choices of the "Good Student's" Characteristics

	Characteristic	Frequency in no.	Frequency in %
1.	Critical and analytical thinking	237	17.6
2.	Ability to apply former to new learning	198	14.7
3.	Differenciates between important and insignificant material	181	13.4
4.	Intellectual curiosity	161	12.0
5.	Familiarity with the studied material	137	10.2
6.	Knowledge beyond studied material	82	6.1
7.	Ambitions for further achievements	71	5.3
8.	Good memory	63	4.7
9.	Makes further efforts than formal expectations	50	3.7
10.	Achieves good marks without too much effort	49	3.6
11.	Prepares before and after each class	37	2.7
12.	Carries out assignments given by instructors	96	1.9
13.	Adjusts to instructors' expectations	22	1.6
14.	Socializes with instructors	19	1.4
15.	Never misses a class	14	1.1
		1347*	100.0

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* Only those participants who chose four characteristics were included in the analysis; the number refers to the number of choices and not to the number of subjects.

Table 2

Distribution of Choices of the Characteristics of the "Good Student"

According to the Students' Self-Definition

Characteristic	Excellent, very good student N = 80	Below Average N = 82
1. Critical and analytical thinking	40	22
2. Differenciates between important and insignificant material	30	26
3. Intellectual curiosity	42	34
4. Familiarity with the material	17	44
5. Knowledge beyond studied material	15	13
6. Ambitions for achievements	28	10
7. Good memory	11	40
	183	189

INNOVATIVE CLASSROOM METHODOLOGIES

FRIDAY, 18 JULY

0900 - 1030

LATERAL THINKING AND TWENTIETH CENTURY ART
A CROSS REFERENCE OF TECHNIQUES

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What is the relation between the photograph of the Mona Lisa with a beard, a painting of six images of Lenin on the keyboard of a piano, a wooden dummy head, and the concepts of lateral thinking of Edward de Bono?

In his book LATERAL THINKING, Edward de Bono explains what he means by the term. To clarify his meaning, he distinguishes between two processes of thought - vertical thinking and lateral thinking. He identifies vertical thinking in the following way: it is selective, analytical, sequential, and consistent, it requires one to be right at each stage of the development of an idea, it denies areas of exploration which are unrelated, it concentrates on the issue and excludes the irrelevant, it depends upon categories such as classification and definition to identify unalterable qualities, it follows the most likely path, it uses information to reach a conclusion, and its process is finite, made up of answers.

In contrast, de Bono defines lateral thinking in opposite terms. Laternal thinking develops alternative approaches to a situation, for the sake of exploration. It is provocative, to disrupt the logic of the analytical. It reaches unsubstantiated conclusions through jumps in thought, independent of sequential thinking. It is inclusive, welcoming the irrelevant. It uses definition and classification not as absolutes but as labels of convenience. Lateral thinking follows the least likely path. Its process is that of probability, expanding options and guaranteeing nothing. It is the opposite of vertical thinking, but because its exploratory process is multi-dimensional, it is much more besides.

The need for lateral thinking is based upon the model of the mind which de Bono constructs in his book THE MECHANISM OF THE MIND. To summarize, communication, the transfer of information, takes place in codes which are the result of patterns already existing in the mind; the mind functions as a pattern-making system which not only creates patterns but recognizes them; the memory trace within the passive mind is called a "self-organizing" system which, within limited areas of the memory surface, selects, rejects, combines, and separates; new information received by the system adapts itself to accommodate the existing pattern according to a self-maximizing principle.

The significant conclusion that de Bono draws from this model of the mind is that the self-organizing system is an efficient and effective one for establishing pattern, but that the system has no expedient way to restructure pattern once it is established. The tendancy is towards centering, towards reinforcement of pattern, which thus increases the rigidity of pattern; there is no in-built system to offset this tendancy which would lead to reevaluating existing patterns or to restructuring them once they had developed.

The concept of lateral thinking provides a way out of the dilemma. By coming up with new ideas, by resolving problems through new approaches, by allowing for continual reassessment and on-going possibilities of choice, by preventing divisions and polarizations, de Bono's concept is able to restructure existing patterns of thought from a variety of directions. Lateral thinking is both an attitude about communication and a method for handling communication.

De Bono's concept of lateral thinking provides a way out of the dilemma in two ways: by creating alternatives and by challenging assumptions. One purpose of lateral thinking is to create alternatives to any proposition. Its premise is that there are always various ways of looking at any given situation, and that a particular approach is only one of many possibilies. Another purpose of lateral thinking is to challenge the existing assumptions which are the foundation of those patterns. Its premise is that all beliefs are open to question, that all patterns of thought can be restructured.

To teach restructuring of thought patterns, de Bono outlines methods whereby, through systematic practice of skills, it is possible to learn how to develop the ability to create alternatives and challenge assumptions. Those methods include discovering dominant ideas and crucial factors, breaking issues into component parts, reversing expectations, brainstorming, developing analogies, identifying crucial entry points into problems, exploring chance and random choice, and using the language tool of "PO,"

Intrinsic to methods are attitudes about the way ideas are to be handled, and the word handled is chosen advisedly. There is a sense of detachment. Judgement is suspended. Ideas are to be manipulated. The irrelevant, the fanciful, the outrageous replace goals of being right and getting answers. The attitude of handling ideas as instruments of investigation rather than as values in themselves becomes a process, a means of exploring arenas of the non-rational, chance, and randomness for the purpose of creating alternatives.

I accept de Bono polarities of vertical and lateral thinking as I do his his overall concepts about lateral thinking, without judgement, as useful instruments to discuss the process of restructuring patterns of thought. His ideas about attitudes and methods are akin to those found in modern art. They provide a new and original way to compare the concepts of lateral thinking with ideas in twentieth century art in the following selection of slides.

Raoul Hausmann, THE SPIRIT OF OUR TIME, MECHANICAL HEAD, 1919

The dummy head is the kind hairdressers once used. Attached to the head on the right is a ruler, across the brow is a tape measure, next to it, a number and the inner workings of a watch, on the top, a drinking cup, and to the left, a change purse. The objects suggest the spirit of modern life - pressed for money, paced by time, measured and taped, tagged and numbered.

These objects, ordinary, banal, and of no special importance, called ready mades, make a statement that art is no longer limited by the conventional materials of painting and sculpture. When these ready mades are combined, the assemblage makes another statement about the narrow values of man in our industrial society.

The effect of the assemblage of objects is funny even today. If the observer assumes that the human head ought to look like a human head, or better yet, that it should be idealised and imbued with such classical values as beauty or harmony of form, then the expectation, in contrast to the actual sculpture, creates a disturbing sense of dislocation which is both the source of humour and an evaluation. The technique which gives symbolic signicance to meaningless items combined in unexpectedly ways is found in lateral thinking.

The purpose of this art is obviously not that of the visual aesthetic in the traditional art. By creating an aesthetic of its own, distinct from accepted values, this example is using methods akin to those of lateral thinking. The sculpture challenges assumptions; in this instance, it questions inherited high-minded beliefs about the nobility of man which failed to include the immediate reality of the nihilism of World War I or the actual petty concerns of every day life, and it questions accepted ideas about an ideal art which reinforces those traditional values of that society.

Marcel Duchamp, L.H.O.O.Q, 1919

When Duchamp added a mustache and goatee to a photograph of the Leonardo da Vinci painting of the Mona Lisa, Duchamp's outrageous mockery defiled one of the icons of classical art in the best tradition of Dadists of World War I who delighted in the desecration of traditional art. His blasphemous action, which dared to deflate the sacred, is the provocative spirit of revolt which mocks convention and overturns beliefs.

If reason and logic had led Europe into the senseless destruction of World War I, then the assumptions of that society, including those of art and beauty, had to be reevaluated. By encouraging the irrational, the intuitive, the illogical, through demonstrations of anarchical language and behaviour, not simply the pattern of thoughts of individuals could be restructured in the way de Bono suggests, but the patterns inherent in Western civilzation responsible for such destruction could be undermined. It is as if the goals of lateral thinkinge were magnified a thousandfold.

The purpose, as well as the techniques, of Dadaism is found in lateral thinking. The shock value of the moustached Mona Lisa, which Duchamp called a "ready made aided," is part of the disorientation process, just as is the urinal he entitled "Fountain." Both the ready made and the mobile, first introduced by Duchamp, provided new possibilities of association that attacked accepted beliefs of society. But equally revolutionary, and overturning all external value judgements about art, is Duchamp's attitude which claims that the discovery of an object, and not any inherent aesthetic value, justifies its acceptance as art, an attitude which is not unlike that in lateral thinking towards the non-judgemental use of ideas which denies ideas any inherent worth, and finds their validity only through their effect.

JEAN (HANS) ARP, FLEUR MARTEAU, 1916

To open himself up to new approaches in painting which would free him from inhibiting rational logic, Jean Arp began experimenting with automatic drawing in Zurich in 1915, working rapidly and spontaneously without qualifying or pre-judging the outcome. Although he claimed that the result was without meaning or intention, the forms he produced were abstractions which resembled organic shapes, suggesting amoebae, vegetation, or parts of the body.

Arp also experimented with ways to include the element of chance in his paintings. "Collage with Squares arranged according to the Law of Chance," 1916-17, was created by dropping pieces of torn paper which were then pasted where they fell, the freefall thus creating the composition. For Arp, chance operated according to laws, and these laws were a tangible suggestion of another order of things essentially unknowable.

The example illustrated is made up of thin pieces of wood which have been cut out and then glued together and painted. The variety of irregular organic shapes Arp intuitively came up with, although continually varied, were always recognizable his. Arp often drew his unpremeditated forms on paper, cut them on wood, and then let some accidental arrangement determine the composition.

There are similarities between Arp's approach to painting and lateral thinking. Both investigate automatism, a process which by-passes rational thinking to get at unpremeditated, non-rational experience as a way to provide new alternatives different from those which evolve out of logical thought. Both exploit the accidental or deliberately invite circumstances which provide opportunity for the element of chance, and then either incorporate the results in the outcome or make use the unexpected as part of the exploratory process of evaluating a situation.

Salvadore Dali. SIX IMAGES OF LENIN ON A PIANO. 1931.

By the early thirties, Dali was an official member of the surrealist group and had developed his theory of the paranoiac-critical, a method to induce paranoiac states that would tap images of the pathological buried in dreams and the subconscious, images of blood, of decay, of excrement, and of metamorphosis caught in the process of transformation.

The figure in the painting may well be Lenin. The piano is shaped something like that of a coffin. The black ants suggest dissolution and ideas about death and decay. But cherries suggest the sexual and sensual, and the figures on the piano link Lenin with the senusality of music.

Dali presents incongruous images of a piano, ants, cherries, and Lenin together in a dark room with a doorway leading towards the bright outdoors. Dali claims that one unpremeditated image leads to another through a process of unconscious association introduced by a state of paranoia. The viewer must make sense out of the images of death and decay, of death of the sensual (the armband), of Lenin linked with death and the sensual, of the socialism that Lenin represents linked with both, in any one of a number of ways. It is NOT being suggested that lateral thinking induces states of paranoia to achieve its ends, but de Bono uses similar techniques to stimulate unexpected associations by introducing unrelated images and words at random, a process which demands the resolution of disparate ideas. In particular, de Bono's concept of PO, a meaningless word but a useful method, provides an effective verbal instrument of disruption that continual intrudes upon accepted patterns of ideas by bringing about new associations. The painting by Dali, like skills involving the random, which brings together the unrelated in an unexpected context, forces the mind into imaginative associations.

[illegible] Similarity of Purpose and Method:

The purpose of lateral thinking as defined by de Bono is to challenge existing processes of thought by questioning assumptions inherent in established patterns and by creating alternative solutions.

Three developments in early twentieth century art professed a similar purpose of challenging assumptions, but the attack on the values of society was aimed at more specifically defined targets. Pre-World War I, the Futurists set out to destroy libraries, museums, and academies designed to preserve the past, and to celebrate machinery, speed, war and revolution to create a better society. The Dadaists who followed, protesting against a meaningless war, undermined the world of reason and logic through art forms based on the intuitive, the irrational, the anarchical, and the destructive. The surrealists, ignoring the knowable world, claimed psychic experience the superior reality, and developed automatism that excluded reason to express pure thought, and juxtaposed unrelated elements of the non-rational that resolved itself in the condition of the sur-real. And like the Futurists and Dadaists before them, they flaunted the banner of revolt.

In addition to a common purpose of restructuring thought patterns, modern art also makes use of some of the same methods found in lateral thinking. Of the various ones put forward by de Bono, those of chance, randomness, coincidence and juxtaposition are easily recognizable techniques which help the artist break free of outworn, confining, traditions of the academic and which provide alternatives for art in the twentieth century.

What advantage is there to the subjects of lateral thinking and twentieth century painting through establishing similaries of attitude and method?

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By identifying vertical and lateral thinking as two contrasting processes of thought, de Bono has imposed a manageable structure through his definitions, although the fluency of language and the organization of ideas could sometimes be improved. By setting out various methods and indicating specific skills to learn those methods, he has packaged complex concepts in simple terms which can be learned by anyone who follows the process, even children in elementary school.

But what is missing in de Bono's presentation is the magnitude of his conceptions. There are political, psychological, and philosphical implications involved here of considerate importance. It would be out of place if not impossible to try to discuss such dimensions formally in a textbook of learning skills. But examples from the arts, especially those which are making a philosophical or political statement as are the examples presented in this paper, provide convincing evidence of the broader significance implicit in his ideas.

Teachers of modern art may find de Bono's concepts helpful in a number of ways. The psychological process underlying the methods of modern art which links methods and purpose becomes more comprehensible through the explicit terminology that clarifies issues. The historical conflicts throughout the nineteenth and twentieth century between the artist and society can be interpreted in terms of the attempt of artists to generate alternative views of the world which clash with existing patterns of conservative values. Furthermore, the characteristics of much of modern art - intuitive, irrational, iconoclastic, belligerent, deliberately violating ideas of traditional aesthetics - take on enormous meaning, now reinforced by the concepts of lateral thinking, when seen as viable ways to challenge accepted assumptions in society, whether personal, visual, social, or political.

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Problems and issues in Teaching History at University: Some Suggestions and tips.

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A major issue in teaching any subject, one which appears to present perennial problems for teachers of history is student motivation. Among the problems commonly associated with this issue is: (teachers' perceptions that) history is notably absent from the interests of many students. Recreation, sex, pop music, drugs, money may characterise the interest patterns of many ancient Greeks and Romans and also our students, but like Thucydides writing the history of the wars in the Peloponesis, we might wonder about anyone caring much less learning much from an account of it. Again, like the Athenian we push on convinced of the importance of our topic, even when few around us seem to be. When university students do exhibit academic (broadly defined) motives, they are often directed towards career goals (e.g. business and preprofessional subjects) among which history is notably absent. This is not to indict all students, or history professors for their stereotypes for that matter. Rather we choose not to focus here on the situation facing the teacher where students present themselves well-prepared and motivated for the study of history. The well-motivated student seeks out history courses, whereas a number of others enroll because of course program requirements or because they perceive history the lesser of evils among a list of options, or (not to be lamented greatly) out of curiosity.

While it may sound a bit optimistic to refer to these latter students as being at least potentially well-motivated, a related problem is surely that undergraduate students seem often to arrive ill-prepared by their (formal and informal) educational backgrounds for university study. This presents another problem large and important though it may be, which we will be able to deal with only indirectly here.

A parallel issue raising problems involves teacher motivation. As parenthetically noted above, teachers often believe students will be poorly oriented to the subject and such beliefs and perceptions, irrespective of their particular basis in fact, raise problems for teaching history (or any subject). We assume here that our colleagues are themselves well-prepared, interested in studying their subject further and in imparting the fruits of their studies (an those of others) to students. This, even though some appear to be more interested to communicating with colleagues at professional meetings or through journal publications. Or, worse some even seem to relish becomming bogged down in the memoranda, minutes and other "administrivia" of university or professional society internal affairs. We suppose that is some are better at this than they are at research and teaching, so be it. Concerning teacher motivation, it is the (15 year) experience of the first author that historians are heavily underrepresented at seminars, workshops and consultations about university teaching development. If this suggests that they perceive that they are already pretty good teachers and such activities have little to offer them, they may well be right on both counts. More about this in Part II in the context of suggestions and tips.

One key problem subsumed by both of the issues noted above is an apparent frequent mismatch between student and faculty expectations for a history course. Either students expect history to be "useful" in some practical way and are disappointed, or they have already acquired the bias of history being a "waste of time" and are just "doing time" meeting minimal requirements. For the teacher's part, either disappointment or bitter resignation accompany the discovery that only a distinct minority of the class seems interested in or prepared for serious study. These states of affairs (singly or in combination) contribute to a degradation of the quality of life, at least academic life for students and teachers alike. This assumes, of course, that students wish to earn respectable grade averages and that teachers want to regard themselves (and want to be regarded) as reasonably good instructors.

There are, of course, administrative issues associated with problems in teaching university history courses. We will identify some of these before addressing our suggestions and offering a modest guide to the perplexed. Again, each of these (and others not mentioned) might in itself form the subject of a paper, nonetheless some seem to be pressing enough to discuss here. In "developing" and carrying out teaching evaluation activities, faculty groups, history departments among these, have made a number of errors. Historians, not always known for their quantitative expertise, have ventured into the murky waters of educational testing and have set up faulty, often discouraging systems to evaluate courses and teaching. Often confusing (and mixing) formative procedures for teaching improvement and summative evaluation- for personnel decisions in one, usually confusing student questionnaire, and ignoring formative considerations altogether in a single harshly presented rank ordering of professors by "teaching score" are common errors made in this regard. The latter problem compounds the summative-formative distinction with a confusion between that which educational measurement specialists term "norm-referenced" and"criterion referenced" measurement, or comparing an individual's score with others in a group vs with predetermined standards of quality. Such abuses and misuses of teaching evaluations are often compounded with such dubious even harmful practices as distributing the rankings through the department or even wider as if the top-ranked instructors were "stars" and those at or near the bottom were to be considered unfit. Such procedures, even when well-intentioned, ignore the fact that the albeit imperfect questionnaires index but a few aspects of teaching, and moreover a different system would produce different rankings most likely. Too infrequently is the ranking system itself called into question. After all it bears striking resemblance to the again imperfect systems we usein marking the students so it has a basis in sound pedagogy, does it not? We could continue here with a litany of problems associated with issues surrounding teaching history and university teaching in general, but the remaining space is perhaps best used for more constructive comment.

It is perhaps understandable if historians (and others particularly in the Arts) are sceptical of the worth of advice or help originating in schools of education. After all, are not these people (education professors) responsible for "training" the teachers who botched the job with our undergraduates when they were yet in high school. And do not we also see them strutting their Ed.D.s from Goodness-knows State University in faculty meetings voting proposals for "progressive" watering down the core curriculum (including history requirements), etc. The potential for fact and fancy-based stereotyping here is enormous. The trouble is that as Hacker (1986) says in reviewing Joseph Lowman's Mastering the Techniques of Teaching (1985), normal school pedagogy does have something to offer teachers beset by problems such as those mentioned above. Moreover, modern schools of education have engaged well-prepared scholars with disciplinary backgrounds in history, philosophy, psychology, physics, etc. who have advanced our knowledge of teaching methodology and evaluation and do have worthwhile contributions to make. Twelve years of proceedings of the international conference on Improving University teaching, numerous journals, books (e.g. the Jossey-Bass series) attest to this.

Concerning student motivation, Bausum (1981) writing in the Proceedings of the seventh IUT conference details suggestions for the teaching of more of the continuities of history in order to link students' concerns with those of individuals in other times and places including future times. Even if his analysis is only partly correct, it suggests the reevaluation of syllabus' for a number of history courses. In the same proceedings, Ritter (1981), a Frankfurt economist, describes restructuring for teaching students in more participative and anticipative (of future directions) as alternatives to strict reliance on lecture methods. It occurs to us to suggest that one thing most people, even our students, are interested in is themselves. Consider the surnames of our students, the German, Irish, Hungarian and Estonian families who deposited their progeny into our classes. Why does that black woman bear the Welsh name Williams? What cultural and religous confluence produced Patrick Wong? What contributions to civilization have been made by the Williamses and Wongs, male and female, of whatever race? The starting point for a project, discussion or a lecture could be the students' own names and sense of ethnicity whether the topic be colonial America or European events. If this sounds more like high school pedagogy, it is only recommended as a start with what is already interesting to students, in order to direct their interests in new ways.

Teacher motivation is a persisting problem in these days of all-time low mobility (Hacker, 1986), budget cuts and other disincentives to (academic) life quality. Things history teachers are interested in, recent developments in scholarship including the history of women, minorities and "ordinary" people need to find their ways out of our professional journals and into undergraduate classes. Students, particularly those of blue collar backgrounds who show up in increasing numbers in our enrollments, and faculty alike can develop new interest in the laborers whose toil constructed the pyramids and the eifel tower. A "Mayan" view of the conquistadors is possible now to teach with more accuracy than ever before. Teaching history backwards inductively starting with events closer to the students' lives and interests is not a new idea, but the traditional deductive approach likely dominates classrooms with the inevitability that there is little or no time to "cover" the most recent developments of a period. And why continue to dwell so exclusively on periods giving short shrift to the continuities Bausum (1981) so fervently argued for?

We need to act within our professional associations as well as our departments to insure that teaching ideas receive space in agendas and publications. Cash and time grants for course development and renewal activities (such as have been available in Ontario universities for a number of years) need to be elevated in priority.

With all the "ground to cover" and the growing mountain of facts to dispense, where is the history teacher to find time to try out new ideas, these or others? Developments in (educational) learning theories suggest at least part of an answer. Although it is doubtless true that well-educated persons typically possess a wealth of factual information, the converse, having a lot of facts alone does not make one well-educated. Recent qualitative analyses of learning (Marton, Säljö, 1984) indicate that what kind of learning occurs may be considered to be as or more important than how much is learned. Other research, and experience, has shown that long term retention of concepts, attitudes and values is greater than for factual materials. Learning that is meaningful, that transfers to new situations and "sticks" is conceptual in nature, deeply processed by the learner (e.g. related to what she/he already knows) and is often value-laden. A few important concepts (taught and) learned well are worth more (except for playing "Trivial Pursuit")than the names, dates and places of all the Hapsburgs that ever ruled. The discussion of which of these concepts to include in syllabus' and how they may be taught is fit subject matter for faculty and professional agendas we believe. Whatever defects in prior learnings our students bring to us, and they may be legion, they must also bring along (at least the potential for having) a set of organising principles with which to begin to make sense out of history, if it is taught comprehensibly, with enthusiasm and a sense of continuity with events which interest people today and may well impact them tomorrow.

While we consider teacher motivation, we might also mention the situation of instructional consultants or development specialists whether sited in schools of education or elsewhere. It is good to ask ourselves why we do not see more historians in our workshops. We have been kept busy with requests for instructional and evaluation support and services from engineering, dentistry, forestry, agriculture and medical faculties. The odd participant from Asian Studies or Creative Writing departments should not lull us into a false sense of security about our ability to aid colleagues in the liberal arts. It is time to take a more active stance in repairing our reputations. History teachers likely realise that alternatives to the lecture method have been developed and guidlines for improving a very bad course evaluation system probably exist somewhere. Perhaps one way to start is to find a friendly colleague in history and suggest coauthoring an article on teaching for a professional newsletter. Rather than trying to solve all problems at once, why not just identify a few and try to make a few helpful or provocative suggestions about them? It might generate responses.

In Canada, Foster & Nelson (1980)have conducted surveys of teachers at universities in terms of their reported needs for teaching improvement an the means they see for addressing those needs. Most are unhappy with the status quo and would like to see some forms of assistance in this area. It is time to open lines of communication on the subject between historians and, where possible with instructional developers. It should be noted that when new courses (in History) are designed for Britain's Open University, Canada's Athabaska University or other "distance learning" institutions, there is no question about need for subject matter specialists to work together with instructional developers. We need to establish this idea at our more traditional universities too.

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TENDERFOOTING: A TECHNIQUE FOR TACKLING THE PROBLEMS OF COLLEGE FRESHMAN WRITERS

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Survival. That is our mandate. As University of California writing instructors, we must teach poorly prepared University freshmen how to survive not only our class and subsequent English classes, but how to adapt the skills they learn to the rest of their University writing assignments. They come to us "green" and "tenderfooted," knowing neither the size of the load they must carry nor the formidable terrain they must conquer.

Certain writing problems stumble in the door with them; others spontaneously generate during our course. Some of these new problems we intentionally induce, wanting our students to mature as writers, while others, which we cannot be blamed for, are byproducts of our students' personal learning processes. An example of the former, an "intentional" problem, happens as our students grapple with the first writing assignment we give them, a 2500-word expository essay whose rhetorical difficulty is equivalent to the final essay we assign. In later conference sessions they learn what is expected of them as writers by the time the course ends.

Unfortunately, however, there is no clear solution for the problems in reading and thinking that our UCSB freshmen bring with them. They have come to rely upon an inadequate reading-thinking-writing process that does not serve them at the college level. This misplaced reliance has immediate, upsetting repercussions at our Santa Barbara campus where students' introduction to college reading and writing is the Subject A English Placement Test, a three hour exam asking students to respond cogently to a written source in order to determine placement either in English 1 (a writing skills course which they must pass with a C) or English 2A (an introductory literature course). Of the 225 incoming freshman tested in the fall of 1984, only 49 passed the Subject A Exam. The 80% deemed in need of further writing instruction (never below 65% of incoming freshmen in previous years) were placed in English 1. These are the students we teach, whose writing problems inform this article.

As our students soon discover, passing the Subject A Exam, while important, is ultimately less critical than their ability to digest written sources and write perceptively about them. It comes as a shock to them to find that university instructors take for granted that their students can read primary source material in a variety of academic disciplines, internalize the ideas and information, and produce coherent and insightful written responses. Most of our students cannot do so and thus find themselves in an alien world where their own way of thinking and writing, even their own way of forming a point of view, is not the passport to higher education that they expected it to be.

To fulfill the mandate for our students' survival, we continually re-examine possible answers to the question "How can we direct our students through alien academic territory, without staying on as their personal guides for the whole four-year trip?" As we know and they soon learn, every academic discipline, every class, indeed every writing assignment will be a journey into the unknown. No single passport or arsenal of techniques we might send along could satisfy each unique writing occasion they will encounter.

We try to provide them with the confidence to journey onward alone, armed with strategies for dealing with the risks and pitfalls, by taking the initial risk ourselves and becoming "tenderfeet" in our own classrooms. Unrehearsed, we tackle difficult reading and writing tasks, revealing aloud the questions, ideas, and solutions we have about the texts. As we proceed, our students, observing the struggle, finally join us in a greater understanding of how the reading-thinking-writing process works.

Anyone who teaches composition knows that writing problems are as varied as the students who develop them. However, for purposes of analysis we have organized the problems into four general categories: READING, THINKING, ORGANIZING, and TEXT. The following dragons present themselves when we ask our students to respond to a short, argumentative essay like Lewis Thomas' "Medical Lessons From History."

READING PROBLEMS:

Reading a typical piece of college prose such as Thomas' is more demanding than the reading our students are used to. Few are able to effectively annotate, paraphrase, or outline--skills that would help them tackle such reading. For example, when Thomas writes,

> "Only two centuries ago we could explain everything about everything, out of pure reason, and now most of that elaborate and harmonious structure has come apart before our eyes. We are dumb."

few of our students have more than a superficial understanding of what he is saying. Nor do they have the skills to sort it out.

Annotating, the first of these necessary skills, would require them to engage in an internal dialectic--evaluating, questioning, speculating about, and/or criticizing an author's, in this case Lewis', viewpoint. Most of our unskilled tenderfoot students find themselves shooting wildly, hoping they'll hit something. "Could he mean this?"

Worse still, in the showdown between themselves and the text, they often cannot even find the target, let alone hit it. Because their vocabularies are limited, as is their experience with complex sentence structures, they must hunt through a dictionary, resolving at the same time the referent and agreement tangles of complicated prose. It is not unlikely that they would have to look up the meanings for "reason," "elaborate," and "harmonious" before wondering "What structure does he mean?" Lack of familiarity with different styles and genres compounds their disorientation. "Isn't the author's point always the last sentence in the first paragraph?" they may ask as they flounder. The distance between where they have been and where they need to be, between what they are able to understand and need to understand, is far too wide.

The ability to paraphrase would help close that gap. As lovers of language, we hope to foster our students' appreciation of an author's versatility with words. However, too often we find our students miles behind, still working with content, unable to put into "other" words what an author has said. Paraphrasing can provide students with the kind of interim understanding and writing skill that they need to grapple with complex material.

Outlining would be equally helpful. When attempting to outline, however, our students frequently latch onto a point or example of personal interest as the main point of the article. In addition, they weigh all points equally, failing to distinguish between main and subordinate points and are consequently unable to plot the progression of an argument.

Tragically, student reader/writers who are unable to annotate, paraphrase, or outline, cannot summarize. Because they cannot effectively reduce the reading material to a manageble "chunk" for purposes of their own thinking and writing, their chance for passing courses in which the material is intellectually demanding is severely compromised. Unless we can aggressively sophisticate their reading skills in time to pass the first term, the probability of our "tenderfeet" staying on is slim.

THINKING PROBLEMS:

One never stops thinking. Yet to listen to many of our students is almost to believe they have never started. Though they seem lively and opinionated out of the classroom, they find it difficult to (1)form and defend a point of view in response to an academic source, (2)use the source to enrich the topic under discussion, or (3)incorporate the source in support of their own perspective. These three skills are expected of university-level students, and their lack is what professors complain about when they say that their students "can't think."

The first problem, the inability to form and defend an opinion, is the most serious one because it is not only fundamental, it is also the least responsive to our well-intentioned, quick-fix lessons. Strange as it may seem, our students frequently have not thought about basic aspects of modern life and, even more upsetting, seem to doubt their ability to have a sensible point of view. They cut short the time needed to form a thoughtful perspective or do not see the necessity of having a point of view at all. When supplied with a source of information with which to enrich their view, they do not know how to apply it. They cannot internalize the substance of the source to make it their own or synthesize it with what they already know. The material remains distant and distinctly separate from their limited view of the world. It seems as though someone is "talking down to them." In some cases unable to distinguish between their verbal "off-the-top-of-the-head" opinion and a reasoned, intelligent position, they respond defensively with a tolerant but rather shortsighted position that "Everyone is entitled to their own point of view." That is precisely how they regard Thomas' argumentative point: "We are dumb." "Well, I think he's wrong, but he's got the right to say it." And then they want to dismiss his view entirely.

Clearly, if they cannot sort out what they think about an issue and do not trust their ability to do so, they cannot utilize sources to enrich and embellish what they already know to support their own perspective. In the quotation above, for example, students must grasp Thomas' point--humankind's incomplete understanding of nature--then consider whether they agree with him and who else might share their view.

Fortunately, once our students think and feel strongly and clearly about an issue, they seem almost instinctively to know how to use the sources in their own best interest. Though probably the most difficult skill to teach, productive thinking is the most gratifying for both us and our students. They are thrilled to find themselves capable of sound, interesting thought that others take seriously. After all, being a "thoughtful tenderfoot" is bearable.

ORGANIZING PROBLEMS:

Theoretically, students having read and understood the source then decide how to come to terms with it and write about it; experience tells us that, in actuality, the writing process is not a chronologically distinct, ready-aim-fire sequence. Reading-writing-thinking occur "all at once" as recursive, interrelated processes, making the logistics overwhelming, particularly for our inexperienced writers. In an attempt to latch onto a comparable writing experience to guide them, they face an assignment of this kind armed with the same weapons they used to write their high school research papers. They fall into a reporting mode, which in narrative style strings together references and quotations from the sources, the "then-he-said-this" kind of work. Because they have not attempted to meet the source on its own ground, have not internalized it, it is often said that such a paper has "no voice," when the problem is really much larger. When students do attempt analysis, they lean so heavily on the source that they are suspected of plagiarizing. They do not know how to synthesize the source with their own analysis of it. Nor can they determine, at the outset, fact from opinion, generalizations from specifics, main points from subordinating ones. They cannot follow the logical sequence of the writer's message. "Why does Thomas say 'we are dumb' at the end of his essay when he's spent the rest of it explaining how far we've come in the science of medicine?"

Unable to discern that logical sequence or decide where to begin with "all that information," instead of the brave desperados they expected to be, our students feel like inept clowns trying to juggle too many balls in the air, half of which they sense they could eliminate, although they are unsure as to which ones. Intuitively, they are right. Writing--particularly from sources-- is a balancing act, but a mental rather than a purely mechanical one. In an attempt to solve their problems in advance, our unskilled writers often will opt for some kind of organizing structure, an outline or the five-paragraph formula, and will cling to it even when it becomes clear that the insights that have emerged during the writing process "won't fit." Skilled writers, on the other hand, know that content precedes form--actually determines it--so that imposed structures can restrict as much as support thinking. Skilled writers are able to keep their ideas in constant motion, developing a logical construct as they go along, re-inforcing or changing it as new insights and ideas develop. Student writers, at least in the beginning, find this dynamic unsettling. For them it seems that all the balls are in the air even when they are not, a notion understandably perplexing.

Such problems stem most frequently from our students' inexperience with writing to discover what they want to say and, once having found out, rewriting to explain it to a reader. Our students seem to hold themselves responsible for discovering and explaining their position and for logical thinking about an issue--all in a single act, which is too frequently a single draft. They do not see that they are involved in a thinking process which also happens to be a writing process, that thinking develops as writing proceeds and vice versa. For them the essay's organization does not arise organically out of what they have to say. Rather, it is a mechanical structure that stands alone and upon which they must hang the pieces of their thought with their attendant examples, illustrations, and quotations. Exhausted as a result of trying to find things to say about something they did not understand in the first place, they resort to "Engfish," writing things they would never say in the "real" world of conversation where people are expected to understand each other. No wonder they cry "How long does this have to be?" each time an assignment is given them. Such writing is painfully difficult to do, especially for "tenderfeet" who behave as if University texts, such as Thomas' Lives of a Cell, are written in a foreign language.

TEXT PROBLEMS:

As expected, students who have these kinds of reading and thinking problems produce essays fraught with severe stylistic problems. Every conceivable mechanical problem arises, but what are often seen as purely grammatical or usage problems in our students' writing emerge as warning flags signaling reading and thinking problems. These problems seem to derive from our students' limited experience with, and thus deficient understanding of, reading and writing as an active, developmental process of "reseeing." Rather than the passive decoding process our students understand it to be, reading, as we who love to do it know, is an active engagement of readers with text. By bringing their own experience to the words on the page, readers do more than simply understand intended meaning. They are engaged in a highly creative process of making new meaning, of synthesizing text with experience, the words on the page with the ideas, values, and feelings they bring to it. Writing--the active operation of the writer in making new meaning by selecting words and word relationships to express and communicate--requires the same kind of engagement. Both processes are not only enriched when our students reread and rewrite; they, in fact, have only begun when a student has read something for the first time or written a first draft. Like the living organic growth process from single undifferentiated cells to the sophisticated interaction of highly specialized cells in life forms, rereading and rewriting expand what is seen, what is thought, and, in turn, what is produced.

How do teachers encourage the reluctant and underconfident "tenderfeet" to "re-see" and "re-do" and become better readers-thinkers-writers? We are still experimenting with answers to that most fundamental of questions. But we do know with certitude that we cannot "give" our students good reading or good writing "lessons," in the sense that we might give them a lesson on the correct usage of the semi-colon. What we can do, however, is construct the atmosphere and provide the guidance that allow students to move through their own constructive processes. To that end, we ask students to see our class as an ongoing process for which we supply general goals and ask them to set their own more specific personal goals. Each assignment is viewed as its own process within the ongoing process of class work. To aid our students in achieving their goals and overcoming problems, we sequence the assignments so that each encourages further development. Also, we provide models of our own, other students', and professional writers work in all drafting stages. What a release for us to confess that we often feel like strangers in a strange land: what a relief for them to see professionals wrestling with the same kinds of "ornery" problems the rest of us have. Most importantly, we value good thinking most, and we tell them that by framing all assignments and discussions so that careful, sensible, perceptive, and supported thinking comes first. This sounds obvious. Don't we all do that? We discovered that while we may have expected it, even prayed for it, we often spent more time working with forms, mechanics, and stylistics.

The only way we keep ourselves from drifting into the same teaching patterns that make students attend to form, mechanics, and style first and thinking second is to make ourselves think first. We reason that if we expect our students to read, synthesize, and write about complex material carefully, we would do a better job of guiding them if we do it too. Not only will we see what they are up against; we will also begin to think and talk like participants in the process and consequently design lessons which serve real needs, those we have experienced for ourselves.

We ask our students to select passages out of the difficult reading they do for other classes and bring them to our English class. We try to establish a representative sampling of academic courses. While each academic discipline has its own expectations for presentation, the basic need for close, careful reading and writing are cross-curricular.

Then--and this is the frightening part--each of us reads the piece aloud, thinking and commenting aloud as our students follow along on their own copies. It is crucial to do this "on the spot," so the students can see that we, too, have to work when we read. Sometimes we must read a piece two or even three times before understanding it fully. And we often have questions about meanings of words or references that require some follow-up research. Next, we ask our students to practice this same reading and thinking aloud with each other until they fully understand their own piece. This is useful practice of the kinds of thinking that support annotation and paraphrasing.

Then, we do the writing assignment aloud--a summary--without any prior preparation, other than having already read the selection. Needless to say, putting ourselves on the spot like this is work under duress, but the more difficult it is for us the more useful it is for our students. Our usually silent work of the mind--the questions we have to ask and the decisions we have to make--is on display. We struggle with outlining main and subordinate points, deciding on a controlling idea or thesis, and getting our writing started. We let our students see what we have to go through, not to frighten them away by the difficulties inherent in the tasks but to reveal how the problems can be overcome.

By now one can see where we are going with our curriculum: turning the problems we've diagnosed into the lessons we are modeling and assigning to our students. After going through the whole sequence from initial reading to final draft of an essay with them, our students can see reading-thinking-writing as an individual process requiring certain kinds of thinking strategies. While doing it along with us, they realize where their own repertoire of thinking and performing strategies is limited and begin to diagnose their own problems. They share these diagnoses with us during personal conferences, and for the rest of the quarter their reading and writing assignments are opportunities to expand their repertoires and become better writers.

There are some pitfalls. At first it helps to ask a volunteer to remind you to keep talking out loud when you forget, which is not infrequent before you get the hang of it. Also, you may find your relationship with your students changing. Walking that fine line between looking the fool and commanding respect is tough. We find that our students still seem to respect us and, what's more, learn to risk looking foolish themeselves. Instead of waiting for the "right" answers, teacher answers, they become active participants in a rich, bumbling process of discovery.

NOTES

Of course, creating a curriculum based on a diagnosis of student problems is not a new idea in teaching. Our work has served to reiterate for us that it is at the heart of what works for our students. Linda Flower and John Hayes' studies with protocol analysis (Hayes and Flower, "Identifying the Organization of Writing Processes," *Cognitive Processes in Writing*, LEA,1980) and composition as a problem solving activity (Flower, *Problem-Solving Strategies for Writing*, Harcourt, Brace Jovanovich, 1981) have legitimized composing out loud and given us the inspiration and courage to try it as an integral part of our curriculum.

While much has been published recently about the importance of revision in the learning process, two early articles continue to be significant for us: Susan Wall's "In the Writer's Eye: Learning to Teach the Rereading/Revising Process," (*English Education*, 1981) detailing her methods for teaching "reseeing", and Nancy Sommers' "Revision Strategies of Student Writers and Experienced Adult Writers," (*CCC*, December 1980).

Since we are by training and experience teachers of literature and writing, we found Anne Falke's chapter, "What Every Educator Should Know About Reading Research," an especially useful grounding in psycholinguistic theory which sees reading as an interactive process (*Language Connections: Writing and Reading Across the Curriculum*, NCTE, 1982.)

These sources enabled us to trust our usefulness as "tenderfeet" in sourcing the learning in our own classrooms.

TEACHING AND VISUAL LEARNING:
INTERPRETING THE INSTRUCTIONAL CRITICISM OF ARTIST PROFESSORS

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"I don't want to listen to what you say,
I want to feel what you mean." Hugh Prather

It would be difficult to examine the question of instructional effectiveness without examining the interaction patterns and language of teachers. This paper examines the special attributes of verbal interaction in the teaching of visual arts. The art student and the artist professor are especially victim to the limits of language for linking verbal symbols to the attributes of visual experience and to the subjective dimensions of aesthetic evaluation. Whether it be a consequence of limited vocabulary or inadequate awareness, studio professors regularly avoid, evade, hedge, struggle, abuse, invent, or borrow terms for which students must infer meanings. How students cope with the ambiguity of verbal interaction and how they operationalize rules for performing and adapt to the established customs of the studio classroom are the focal points of my research. During the past decade, I have periodically assumed a hidden observer stance as a university art student and have applied anthropological and participant observation research methods to document studio teaching. The sample episodes that follow have been chosen to illustrate the verbal/visual dynamic of studio teaching and highlight selective pedagogical relationships between studio discourse and visual learning.

Teaching in the visual arts is premised upon a belief that performance criticism is good for the individual and that artistic learning can be facilitated through critical feedback. What most artist professors have come to support as visual art teaching is heavily dominated by instructional criticism. Effective criticism is undoubtedly one of the most evasive teaching skills to master. It is most frequently associated with accurate verbal description, analysis, and judgment of the aesthetic worth of objects or events. Instructional criticism is always made from some value stand - from some subjective bias. At its upper limits it merges with creativeness; at its lower limits it is often destructive of creativeness. But, in every sense it functions as a form of influence behavior that attempts to point the student toward alternative values or methods for making art.

For every studio course there are unique rules, vocabulary, and values that will need operational decoding. For example, when a studio instructor says, "Sally, there s a lot of nice stuff going on in this painting," Sally is uncertain of what "nice stuff" means or which specific aspect of her art has received positive response. Nevertheless, her intuition tells her that whatever she has been doing ought to be continued. For the studio instructor, the phrase "nice stuff" functions as a positive appraisal for some visual quality that is preferred but that may be resistant to descriptive discourse.

Even though the beginning student does not always comprehend instructional talk about art, talk is preferred over no words for two reasons: first, because students believe that meaning will become clear with the passage of time; and secondly, they are more suspect of the teacher s silence. Silence is feared because students interpret it to mean that the teacher is bored with their work, has lost interest in them, or worse yet, is making private negative judgments without affording the student an opportunity to defend action choices or point of view. Many students adhere to the belief that as long as they can keep the teacher talking, they will have a better chance to infer how the instructor is feeling about their achievement. The desire for ongoing feedback causes the inquisitive and assertive student to solicit and cultivate teacher talk, even when silence may be more appropriate. Art instructors are pressured to fill silence and to find words, even when words are not needed and students are forced to assign evaluative meanings, even when judgment is not intended. The result is the unfolding of verbal interaction where a teacher isn't always certain what to say and the student is never certain of what was said.

Laced between this continuum of ambiguity and comprhension lies the essence of what most studio instructors want to teach. Learning in such situations occurs in stages. The initial stage of understanding is knowing the visual reference or focal point of the instructor's criticism and the philosophical framework that guides the criticism. The student must become aware of the patterns of perceptual arousal which draw the instructor's attention to specific attributes of student work. Whichever visual effects gain the perceptal attention of the teacher determine subsequent dialog about the work. More frequently than not, the reference point for instructional discouse is vague or not clearly established. In general, initial dialog focal points fluctuate from aspects of student's motivation, idea, or antecedent inspiration to the technical effects or visual attributes of specific portions of the emerging work. Though such focal points are analytically distinct, they tend to be less clear in actual classroom dialog. What is important to note is that initial judgment of student performance has several possible focal points that begin at a private response level that are not always expressed at the public level.. After privately responding to a student's work, the studio instructor will select from a menu of judgments and select one or more critical points to disclose to the student. At the verbal stage of response, the instructor must find the appropriate term [illegible] to communicate a visual response to the student. Because evaluation is selective, students generally accept positive criticism with some sense of caution. Because criticism involves judgment, students become skilled at letting teachers believe they have been successful in communicating. To allow ambiguous talk to pass, students sometimes nod, as if in agreement. This frequently gives the instructor a false sense of successful communication when in fact the nod functions as an interaction symbol to shorten painful criticism or to gloss over an unwillingness to admit confusion or lack of understanding.

Oftentimes students may think they understand the meaning of instructional talk when in fact they have misinterpreted the terms employed by the instructor. For example, in the following interview excerpt Mr. Allen (a pseudonym) was reconstructing a portfolio critique with one of his students, Lisa. He was attempting to justify her mid-term grade of B.

> Mr. A: Yeah, okay --well let's see here (Mr. A. pauses to look through work again)...okay on this one for example, although I never spoke to her formally about it. I was like impressed by the fact that she selected something that bizarre. In this assignment, I'm like interested in the choices they make for themselves. I am thinking to myself as I saw this one, boy it's curious that she would find this subject interesting at this point in her training. I think that I was much more impressed with her choce of subject than her painting technique. I mean like there's nothing terribly exciting about her style ..but, it does fill the requirement of the assignment.

"Did you tell her that?," I asked. He responded, " Hmm...I think I may have said something like ...that's a really strange painting!"

An analysis of the recorded episode revealed that what was actually said was ""That's strange!" The interview with Lisa about this same episode, revealed that Lisa felt that Mr. Allen perceived her painting as "weird," rather than "unusual or unique in concept." In this particular example, Lisa assigned a negative interpretation to the term "strange" when in fact Mr.

Allen meant to communicate a positive appraisal toward her solution for the assignment. The vocabulary of criticism is particularly problematic for the beginner and especially perplexing in the first few weeks of a new situation. As an art school administrator, I have numerous opportunities to observe studio instruction and to continue to collect samples of perplexing appraisal statements. Consider, if you will, the interpretive problem posed by the following evaluation statements:

> "Your imagery is haunting."
>
> "This one is nice-- real direct!"
>
> "Lots of interesting stuff going on in this one."
>
> "The color in this one is a little bit strange."
>
> "This one works well because it is fairly complex."
>
> "This one is is great because it is nice and simple."
>
> "This one falls apart a little"
>
> "I think this one becomes a little too predictable."
>
> "At last you're starting to use real color!"
>
> "This painting tastes and smells bad!"
>
> "This is the nicest drawing I ever saw from a freshman."

Experienced critics and professors may be able to sense an implied evaluative differential between such criteria as simple to boring, too localized to balanced, or nicest to worst. On the other hand, one might also empathize with the beginner who will struggle to assign meaning to "too predictable," "strange color," or "falling apart a little." Imagine the perplexity for understanding why one drawing is "working well because it is nice and simple" and another "working well because it is fairly complex." Although the two phrases use contrasting terms, they were both uttered as positive criticisms. Interview responses with students indicate that when the labels or criteria are too novel, too abstract, too confusing, or appear to be in contradiction, they create a tension within the learning context that begs for resolution. The initial learning task is a resolution for verbal ambiguity by linking vague terms with some generalized visual impression. To accomplish this task, the student attends closely to the instructor's private interaction with others and listens for the repeated use of ambiguous terms to try to match them with some visual impression.

Verbal and visual eavedropping on the critiques of peers enables a student to find visual matches for the labels used most frequently by an art instructor. Eavesdropping sharpens understanding of aesthetic criteria by associating specific visual qualities to specific terms or phrases. Linguists refer to such context-bound labels or phrases as "indexicals." Visual learning is achieved when indexical expressions trigger visual images or visual generalizations in the student's mind. As one might anticipate, this verbal/visual learning aptitude varies among students. A positive correlation exists between the ways some students adopt and employ indexical terms and how the instructor perceives their achievement. To avoid being judged as lacking aesthetic understanding, some students mimic desired effects without the conviction that such effects have merit. For example, in the following interview with a student who earned a C for the course, note how she describes the desirable outcomes for Mr. Allen's preferences.

> Maxine: Although the ones that came out looking the most real are my favorites, I chose not even to include them in the portfolio I submitted for my final grade. This one over here for example - the one he had us draw with a pencil taped to the end of a yardstick - Ahh .. he just loved that one...because it has the least of me in it. There was no way I could make it look realistic. Now here's a couple I didn't show him (she pulls out two highly rendered figure studies). These took me more than a half hour just to do the outline. I took them home and worked hours and hours on them - putting in the color and shadows. I like them so much better than what he had us do in class. I really thought that this class would improve my knowledge of human

> anatomy. But when he saw me working realistically he had the nerve to tell me to put those drawings aside and save them for someone who might be interested in medical illustration, where realism might be better appreciated. He actually told me that they didn t have any artistic [illegible] said that with sarcasm too!

When Maxine was asked to provide advice for someone who might be taking a course from Mr. Allen next term, she responded this way:

> Maxine: I would say to them "make them fuzzy, fuzz up everything you draw. If they look real, smear them!" That s the one criterion I picked up pretty fast in here. After my first critique, I went through all my work and sorted those that were more fuzzy than more realistic. I knew he would like the fuzzy ones and he did! And... another thing, he also likes things that are linear and grotesque! Like this drawing here where the woman came out looking more like a frog! Between us, I will toss out all these fuzzy and grotesque ones after the course and keep the real ones. I still have no idea why he prefers the ones that are grotesque and am real curious to see what his own work is like!

In this interview sample we find how one student solved the problem of copying desired effects; however, Maxine's choices of terminology indicate negative affect toward the desired visual qualities. The same effect she called "fuzzy" Mr. Allen had described as " a sensual manipulation of the surface qualities." What she called "linear and grotesque" Mr. Allen described as " exciting linear distortion." Because students can become skilled at copying desirable visual effects, studio teachers can be fooled into the belief that their instruction has been effective.

In contrast to Maxine, let us examine the perspective of Brad, a student who earned an A for Mr. Allen s course. When he was asked what advice he would give another student who was about to take a course with Mr. Allen, he responded with the same independence that made him stand out in the course:

> Brad: Basically, I would tell him what I would tell anybody...do what you think is best. Don t just try to work for Mr. Allen and don t try to be someone else. A true artist has got to reach inside of himself. Lots of kids in this class are naive and they show that by looking for formulas to succeed. There are no big secrets to hand down if the student isn t ready to use them.

Unlike Maxine, Brad avoids the passing of recipes for success. Like other high achievers, Brad exhibited a greater use and understanding of the indexical language and was sufficiently familiar with the instructor's values to allow him to take greater risks within the conditions of studio assignements. He understood how to maximize the flexibility for response within the context. Those students who can expand upon the instructor's expectations while demonstrating an understanding of the instructor's language and motives are those most likely to receive high grades. When asked who his best student was, Mr. Allen confirmed this position by saying that Brad was best because, "first of all, he understands the objectives; secondly, he can apply them to his work; thirdly, he can push the boundaries of my assignments; and finally, he doesn't act bored - he has a positive attitude and when you talk with him he can respond intelligently to what you've been saying."

To gain understanding of interaction pattern differences, I systematically coded all the verbal interaction patterns between Mr. Allen and his students. An analysis of verbal interaction revealed a variety of qualitative differences between groups as sorted by the final grades received for the course. A representative sampling of observational propositions from that analysis follows:

> Observation 1: Students receiving high grades received 2.6 times more verbal interaction time with the instructor and four times as much actual information as those receiving low grades.
>
> Observation 2: Verbal responses are solicited from students that receive high grades three times more frequently.
>
> Observation 3: Although students who received high grades received three times as many positive comments about their work as low achieving students, they also received 2.5 times as many negative comments.
>
> Observation 4: The teacher's structuring of verbal interaction is

different for students receiving high grades. With the high achievers, instructors are observed to use more examples of specialized phrases and indexical terminology.

Observation 5: Students with high grades are allowed to interrupt the instructor more frequently to steal the speaker turn or switch the topic of criticism.

Observation 6: Students with low grades were more frequently ignored, cut-off, and dominated by teacher talk.

Observation 7: The instructor is more likely to cultivate verbal interaction with high achievers by asking more questions of clarification regarding their performance ideas.

Observation 8: Below average students may have an awareness of language and criteria but have difficulty operationalizing such language into guidelines for performance.

Observation 9: When average students have problems with interpreting indexical terms or aesthetic criteria they visually observe the working process of others perceived as "better" and search for visual cues that they can mimic.

Observation 10: The high achiever more frequently adopts the indexical language of the professor. When teacher talk is ambiguous, the high achiever is likely to seek immediate clarification, whereas the lower achiever is more willing to operate under the assumption that meaning will become clearer with the passage of time.

Observation 11: During formal critiques, most students tend to refrain from making judgments about their work, however, the high achiever five times more frequently supports verbal abstractions with concrete visual examples and directs the visual attention of the instructor to aspects of the work that imply positive performance.

Observation 12: Female students are more skilled at cultivating male teacher talk because they are more culturally able to extend eye contact time and thus more able to extend explication through nonverbal communication. In the speaker/listener relationship, the listener has fewer opportunities for conversation turn taking when he/she cannot perceive facial cues which allow for taking the speaker turn.

Observation 13: There are observable and describable differences in the content of talk among achievement groups (i.e. with high achievers there are more references about future, more comments about the whole v.s. the part, and more interest in the sources of inspiration).

In this brief summary of my participant observation I have tried to draw the reader's attention to the features of instructional talk that relate to student achievement in studio classrooms. I have concluded from this body of research that teaching effectiveness in the visual arts can be improved if studio teachers would become more responsive to the relationship between verbal language and visual knowing. They must become more sensitive to how they employ and define phases and labels to justify their subjective judgments and they must guard against unclear or unsupported value statements like "That's interesting" or "nice stuff."

To conclude we turn to the wisdom of Jean Paul Sartre who once said: "We are not lumps of clay, and what is important is not what people make of us, but what we ourselves make of what they make of us." In the final analysis, what is more important than the art professor's language or behavior will always be how words and actions will be interpreted and acted upon by the student. Similarly, what is important to this report is not so much what Mr. Allen or this researcher may have said, but what individual readers can make of what we both have said.

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CONVERSION IN THE CLASSROOM
THE JOURNAL WORKBOOK AND 'THE WASTE LAND'

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The following essay records an experience I have had which bears on contemporary discussion about the teaching of the humanities. The experience was a dramatic one with several compelling implications. One hard datum is that the course I taught as a result of the experience received much higher teaching ratings than any course I had ever taught. Typical of my earlier courses was an elective I taught in 1984, on the family novel, on a subject I was very interested in, and taught in the only way I knew how. I gave the usual syllabus, required two papers, and that was it: the classes were discussion, where we sat in a circle, and the attendance progressively dwindled. My chronic lack of conviction about the course could be seen in some of the students responses to the question, "How Could the Instructor Improve the Course": "Class period lagged because people were bored and didn't understand where it was going.' "We were going in circle instead of heading in one direction; we needed an outline or set of objectives to work from." "No structure to the class." "Need more organization and guided discussion." "Teacher dry and boring--needs more organization to class discussion." "Course went very slowly because no structure to it."

For years I had read evaluations like this and been puzzled (and depressed) for a number of reasons. Though other students found the class successfully organized, I felt these were the already self-motivated students. I rationalized that the students complaining of disorganization were those who were less mature, who needed high school structure, etc. But these comments wrung a bell in myself; they corresponded to my own experience of the class. But they left me in a bind, unable to know how to do anything about the problem. Perhaps the problem was endemic to the nature of the class and the subject; how could one 'organize' a genuine open ended discussion, how could one 'manage' intellectual and personal development in the students? I performed endless twists and turns on the subject, and came out nowhere. The only strengths cited in response to the question, "What are the strengths of the instructor", were that I wished to promote discussion, that the books (some of them) were interesting, occasionally that I could provoke thought. Indeed, that was about it: some good books, and an (increasingly dwindling) hope for thoughtful discussion. The numerical ratings were typical for me. In response to the question, "Rating Instuctor Deserves as a Teacher", the responses were "Excellent" 8.3%, "Very Good" 37.5%, "Good" 25 %, "Acceptable" 5.9%, "Poor" 0.8%. I should note our students tend to be very kind on the evaluations, and that these statistics were below the department average, and way below the average of our star teachers.

For the new course, however, a large freshman English course, the statistics were way above the department average and on a par with our star teachers : "Excellent" 30.8%, "Very Good" 53.8%, "Good" 15.4%, "Acceptable" 0%, "Poor" 0%

The beginnings of my new experience began when I was willing to ask myself some elementary questions: why was my class attendance lacking? Why were not my students prepared when they came to class? Why during many minutes of the class did I feel like a cat on a hot tin roof? Naming the thing was a breakthrough, and I suppose I should apologize that I should have taken so long to name something that was so obvious. I also was able to say to myself that I did not know what I was doing in the classroom, i.e. not only doing in it, but doing during it. If my class was slack, I did not know how and for what reason it should be strenuous. I was professional in scholarship, but not in teaching; I did not even feel like a good amateur in teaching.

The next step was the discovery that I was not alone. I happened to confess my sins to a colleague, who was known to be very successful in the classroom, and he replied that he had experienced something similar: lack of attendance and preparation by the students, and resistance by the students to all but minimal assignments, to enforced deadlines, and to low grades whatever the reason. I kept making my confession, and have yet to discover one colleague who did not recognize in some degree what I was talking about. Part of the problem seems to lie in our recent academic history.

The 1960s was an exciting time for me. While the Bank of America burned, I and my students experienced a new sense of importance in what we were doing. 'Why study poetry' was not just an academic question, and other questions like it rolled through the classroom. The new gestalt continued into the 1970s.; and as for my older colleagues, who no longer got the respect they felt they deserved, I felt they deserved the lack of respect they got. But as the 70's continued, I too began to sweat my classes; if I was not stimulating and popular, my courses would be undersubscribed. Indeed, if I was not stimulating and popular in a given class, my next class would be under-attended, and I would have to work desperately to make up for that unforgivable sin of having been boring once. Pretty soon I could hardly say anything, without feeling it might be boring. A point might be interesting to me, but to them? Could I have confidence that any point would be interesting to them? Why should they be interested in anything?

What had happened to me (and to us)? When the roof fell in in the 1960s, the old disciplinary model of education went out the window, never to return. Now we find ourselves in a situation where we would like to recover some of the rigor, as we remember it, of a pre-1960s model. But we have no basis on which to recover that model. Noone wants, or none of my friends want, to return to the old disciplinary model.

But the result of all this is that there is a kind of spectre haunting many English professors, namely a lack of belief in the professionalism of what they are doing. What are the justifications of literary study? If we are teaching writing, that function seems to have been taken over by the new Writing Center types; and we were never clear as to how we were teaching writing anyway. If we are teaching culture, that function is better served in the students's minds by taking courses in sociology or political science or something more immediately germane to what they plan to do after graduating. If we are teaching appreciation and general enrichment, so also are we all, all humanities teachers; but general enrichment, we also know, is not motivation enough for students to attend our classes regularly. Suppose they decide they are not being enriched If we are teaching facts or theories, what facts or theories? Our critical industry of the last 20 years has demolished those pieties. And if we think to resurrect them, why should students pay attention? In the mean time, there is a feeling of bad faith all round, a lack of commitment, a set of rationalizations, an enormous set of schizophrenic pressures on the faculty member. In the mean time also, students still want to read, and hear about literature; they want to write poetry and stories; they want to be perceptive and interesting and reflective. But they don't know how to get there. And we don't seem to know how to get them there.

This question is very relevant to the current and choice topic of how to teach writing, and how the teaching of writing relates to the teaching of literature. How can we make the literature we teach intersect with our students's minds so that they become better writers? One of the chronic failures of even the most thoughtful writing textbooks is that there is no clear relation between a student learning their principles and a student learning to write well. This anomaly probably wrecked the old belief in Rhetoric; but the same anomaly haunts the newer rhetorics. The central aporia in writing handbooks is that they have little sense of how they can get students to think originally, to have a life of genuine reflectiveness, so that their writing comes out of a creative source in themselves. You cannot doctor a patient who is dead. But how can we bring our students to life?

The best place I could begin was with my own experience. There were certain things I knew about myself. However unconfident I was about my teaching or about the value of English classes for my students, I knew that I loved to read and think about what I read. I was good at going into a literary work and taking from it what interested me, and then putting that together into an argument which made for a spirited insightful essay. I loved to think about my own life, about my experiences, my friends, my family; I had a journal and loved to record my insights and impressions. I knew I was capable of being interested in ideas. I loved the life of the mind and practiced it. I was not afraid of Joyce or Wallace Stevens or T.S. Eliot, but went to them for what I wanted.

In other words, I had a skill--call it literate reflectiveness--that my students did not have, or had only a little of. I was confident that once they saw what it was, they would want it for themselves; and if I could show how I could bring it about for them, they would eagerly follow. One thing I grew to realize was how easy this basic skill is for us, and how hard it is for them.

I needed to determine some things which included:

1. the goal of the course, what I wanted it to do for my students's minds and skills. 2. the plot of the course, its progress and stages of development. 3. the nature of the readings and how they would contribute to the student's development. 4. the nature of the classes, what they would be used for, what would fill them, and what value that would have for the students. 5. the 'homework', what my students would be doing outside of class, and how this would relate to the other parts of the course. 6. the amount of time I would have them spend, and why. 7. the grades, what they would be based on, how they would contribute to the goal of the course. 8. the amount of time I would spend on the course.

These formerly stale and simple questions now took on a real life for me.

As a model of the goal of the course, I constructed for my students a journal workbook,which consisted of the following.

1. **Questions**: interresting, specific, general, related to personal experience, related to experience of author studied. 2. **Connections**: with other courses, with other interests, with other reading, with personal experience. **Quotations, Books**. 3. **Key moments, incidents**, in author, and in your life experience, what they mean, their implications, what their sources are--what questions, connections, and insights lead out from them. 4. **Insights**: observations, generalizations, conclusions, breakthroughs, realizations: author's, your own. 5. **Contexts**: conditions, circumstances, myths, taboos, family history, social and economic history. Insight into what drives the person, what obstructions interfere with full living: apply to the author studied, plus your own life experience, or that of those around you. 6. **Dreams, Words, Images**--their aspects, and significance if any: Dickinson, yourself. 7. **Characters**--analysed; clusters of characters

They were to write in their journal notebooks both in and outside of class. The point was to let the student's reflections mix in with the reflections of the writers we studied. Ultimately, I would have the students compose their own version of "The Waste Land", which I defined as a pastiche of reflections, quotations, dramatizations, given a five part structure. Along the way, we did both creative and analytic papers, and looked forward to an eventual integration of all the work of the course. Each week I published a Wednesday Weekly, where I could recasts the course (within the larger outline of the general syllabus). I also distinguished two dimensions of student performance: the quantity of work done, and the quality of work done, the quantity leading them to minim level grade, the quality accounting for grades above the minimum. I also told them it was time to come up out from under a lifetime of criticism and living up to other people's expectations: their parents, their teachers, their peers. It was time for them to learn to think for themselves, to write from within, etc. This speech seemed to make them feel good, like we were adults now and in a conspiracy against the past. It also meant they were in for a lot of work. I defined very clearly the intellectual and quantitative worth of class attendance, homework, in class exercises, etc. Nothing was done for its own sake, all was done in view of the goal of the course. I can hardly indicate here the variety of exercises we did, with conferences, the computer, research, in-class exercises, free writing, creative writing, various kinds of essays. With my Wednesday Weekly, I kept the pressure up, and the fun; and I could adjust and readjust the schedule as I saw fit. Gradually, very gradually, the class came to seem like 30 minds dealing with a subject, rather than 1 mind telling 29 minds what to think. I began to think of the class as having different parts, depending on what I wanted my students to develop. I found myself teaching more according to a structure for them, not according to a structure for me.

So what I wanted for my students was: for them to develop an ability to have original perceptions and insights, to develop those insights, to make connections among them, to link them with things they read, to be alert to ways of expressing them, to connect them with dreams and memories, to explore their contexts in their society and family history. What more elementary than this? What less capable of being taught, we assume? What more intimidating to our students? What more simple, once it is achieved? What we need to do is assemble the best we have known and experimented with, put it together, and lead our students through it. On the basis, something like a professional basis for teaching in the humanities could be achieved. An implication here is that we are not ambitious enough for our students, or we define our goals for them in too limited a fashion. It is not enough to get students to ask questions, or to pay attention to what the text is really saying, or to develop theories of their own, or to explore their emotional life, or to read the best that is known and thought, or to write creatively, or to write clear and effective prose. We need to do all these things at the same time. We have not been ambitious enough.

This essay has a direct relation to the current interest in critical thinking skills as the key to the nation's educational problem. Teaching a student how to think is indeed at the heart of the matter. But lessons in how to question, how to hypothesize, etc. may be redundant for the student who is already turned on, and useless for the student who is not. Many books aimed at building thinking and writing skills thus fail for the student who doesn't have these skills, and are useless for the student who does. These books thus fall into the crack seperating unreflective from reflective students. Before a student can learn how to question, he must also want to question. Before he can appreciate hypothesizing, he must want to hypothesize. Before he can criticize, he must know how to synthesize, and he must want to synthesize. Shelley said this very well in 'A Defense of Poetry'. The pleasure and the passion of thinking must accompany its training, or little will be accomplished. Much of our past and current pedagogical theory is based on hope, that if we teach heuristics, or outlining, or close reading, or grammar, etc. then the central thing, i.e. "thinking", will take hold. But we need to be more professional than this. We must devise ways to build the central thing we hope for.

What we teachers do is hard to define: we read, we think, we make connections. By the time we have learned such skills, we have forgotten how we learned them, and so we are puzzled how to elicit them in our students. We need to retrace the steps of our basic learning, and reconstruct them for our students. We need artifice and design to promote the basic passion that our students have missed experiencing. We need technique and vision. The vision must be the most ambitious possible, the most comprehensive, aiming at maximum development in our students. The technique must be varied, concentrated, careful, and flexible, always exercised in light of the vision.

There was nothing in the class that could not contribute to our self-exploration, our self-expression, and our communal discoveries. This was not a simple subjectivism, since we were being honed by an articulated subject matter. Our experience was knitted to the books we read. It is this knitting which needs to take place between composition theory and literature. There is much interesting pedagogy being devised for writing courses: pre-writing exercises, peer conferences, revision exercises, formalistic exercises, computer exercises, etc. These can be related in exciting ways to the intricacies of the subject we teach. Otherwise the writing threatens to remain empty, while the literature courses threaten to remain mute.

Sometimes we may be mislead by the facility of the language of English Majorese. Words like "irony", "point of view", "narrator", "distance", "tone", "convention", etc. are valuable and interesting words, and can connect with our inner and outer exploration; they can also be code words for a secret rite of initiation. It is ultimately useless to know about "point of view", for example, unless it connects with our own wrestling with our own points of view. A meter making argument requires us to know the argument in order to get at the significance and beauty of the meter. And we are required to engage the argument with all the resources of our wits and hearts. I have always taken this to the central lesson of the 'new criticism'. If we are English majors, there is a certain ladder we need to keep climbing up and down: up into the sophistication of our terms and down into their roots in 'foul rag-and-bone shop of the heart'. Back and forth, each gives richness to the other; without the ladder, the terms lose substance and become pedantic, and the heart loses its precision. Similarly, we must be very careful about using such words with non-majors; but even here, with non-majors, where we may talk more psychologically or ethically or socially, we need to keep climbing the ladder up and down between our intellectuality and the basic springs from which it comes.

Learning by doing is a venerable principle, but we need to apply it to what we teach in the liberal arts. Students need to learn to do the intellectual life. And we need to teach them. We may need to let ourselves enjoy what we do, to let ourselves back in for the luxury of doing what drove us to this profession in the first place--relaxing with a good book and letting our minds rove, both in class and outside of class. Our only necessity is to devise a structure that enables our students to rove with us. At first this double consciousness, reading for ourselves, reading for our students, may seem like a burden. But I found it an eventually enrichening habit, leading me to a range of awareness I had not had before, as though my own thoughts could not emerge unless they emerged for others.

INTERDISCIPLINARY STUDIES

FRIDAY, 18 JULY

0900 - 1030

SERVICE-LEARNING: LINKING STUDENTS AND SERVICE IN INTERNATIONAL/ INTERCULTURAL SETTINGS

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Some years ago, in the early days of the move to internationalism in education, Harold Taylor wrote a book whose title has taken on its own vitality, "The World as Teacher." Many have used that title, or variations of it, in justification of the belief in the value and need for international/ intercultural education.

If, however, we were to examine with honesty how well traditional study abroad programs fulfill the goals for developing international/intercultural knowledge and understanding, would we be satisfied with the results? Or would we admit that, in many cases, the program represents a transplanted home campus, classroom-based, lecture-oriented, Euro-centered, with little direct and intentional use of the experience in the other country or culture as the curriculum? Some in international and intercultural education have been raising these questions in order to examine possible new approaches in light of some chanted realities, realities involving new pedagogies, student needs and motivations, and the calls for deeper understanding of the world and its peoples. They are trying to respond to James Coleman's comment on the traditional curriculum as "knowledge rich and action poor," and his call for more students to be involved in what he terms the "action curriculum."

There is evidence that students agree. Volunteer agencies have many young people coming to them to help fill unmet needs. The student desire to "stop-out"--interrupt studies for a period of experience of the world--is a common phenomenon, and Operation Venture finds 500 placements a year for students from the group of northeast U.S. colleges which it serves. In most cases, however, students must do this outside of, and unconnected to, their educational pursuits and careers.

Is it possible that students are telling us something about themselves and their needs by engaging in voluntary community work, bridging for themselves the gap between social needs and their own moral and psychological desire to experience the world directly? Can we, perhaps, enhance their experience by linking it with an intentional dimension of learning? In the words of the Mission Statement of The Partnership for Service-Learning:

> The right relation of study and action is one of the enduring questions of education. Many have remained in the cloistered halls for two or four or more years and their powers have grown through the disciplines and culture of the college. For others, the rhythms of study and action must be different. For them, the disciplines come alive only when tested in action.

Service-learning as an aspect of experiential education is an attempt to respond to these student needs by joining two goals--academic study and service to the world. Through service-learning programs students work with individuals and communities to deal with human needs. Studies may be in the Liberal Arts or directly related to technical skills and career goals. Students bring to the communities they serve either the general energy of their hearts and hands, or specific skills and knowledge related to their level of study and background.

What do the students gain from the experience of study and service? First, their academic study of history, economics, political science, sociology, psychology, languages, literature or the arts, is enriched by living in the other culture. They field test the ideas and theories learned previously, and learn to look critically at these. Secondly, the union of intellectual growth, skills development, and positive interpersonal relations contributes to their understanding of their own identity, sense of values, and, as Erik Erikson has put it, to the mutual confirmation of themselves as part of society.

The relationship, and importance, to international/intercultural studies becomes clear. By placing students in an international/intercultural setting in a service situation, and by asking them to study and reflect as a participant/observer on that culture and its values in relation to their own, students gain a new and more sophisticated perspective on human and global issues. Service-learning leads the student to understand more realistically the nature of human institutions, behavior and culture. As the service makes relevant and immediate the academic study, so the academic learning informs the work. Through this mode of learning and experiencing the culture, community and country truly become the curriculum.

To cite specific examples from existing programs: a young pre-law student serves in a probationary hostel in inner London; a nursing student helps at a re-habilitation center for the disabled in Jamaica; in Ecuador education majors tutor ESL to primary school children. They cannot help but come back with enhanced understanding, of themselves, of other cultures, of global realities. Their own words become revealing of the impact of the experience. One young woman writes, "I learned more in four months than in fourteen years of education."

Equally important are the related dimensions for faculty, pedagogy, and curriculum which are enhanced by these programs. As students learn, so also do their supervising faculty. Service-learning provides opportunities for faculty to look at their disciplines in a new way. Various models for academic supervision of students allow faculty to work out with the student the shape his/her studies will take, determine what work will be offered for credit, the form and criteria of the evaluation. By designing and supervising learning activities which relate their disciplines to the work and location of service, faculty find new dimensions and new relevance in their own research and study, and discover the riches of a new pedagogy in experiential education.

Curriculum impact is also apparent from these programs. Solid pre-departure preparation in participant/observer skills, how to learn in an independent context, writing and journal-keeping, and, of course, knowledge of the culture and country the student is to enter, are all needed to an even greater degree than with traditional study abroad programs. All of these can help to develop or enhance the campus-based dimensions of international/intercultural studies.

These points are not speculative but are based on actual experience and existing programs. Through a consortial structure of two- and four-year colleges, universities, and service agencies, The Partnership for Service-Learning, pilot programs have been tried in Africa (Ghana and Kenya), and have been established on a continuing basis in England, Jamaica, Ecuador, and the Philippines. Similar opportunities are under development in Israel, and other areas. Although the focus of these existing programs is international, it's worth noting that equally powerful intercultural experiences can be provided "domestically." A student from the urban northeast can have an exciting experience in Appalachia; or a student from the rural mid-west can learn meaningfully from a period of service in an inner-city project.

Out of this background and experience some patterns and recommendations for program design and implementation have emerged. The service-learning experience and its academic surround can be designed and implemented in several ways, but any design requires careful attention to:

1. orientation of participants to the theory and practice of experiential learning, as well as to the culture they will enter;
2. networking between college(s) and established service agencies and academic groups to provide placement and learning;
3. ongoing communication between academic and service personnel to monitor the performance and progress of the students;
4. design of the academic surround so as to relate the experience to learning;
5. sound validation and evaluation criteria and processes essentially in the hands of home campus faculty.

There is a variety of ways faculty may validate the learning which comes from the experience, but for many of these programs the Learning Contract mode has been chosen. Before departure the student arrives at a generic set of learning objectives to be aimed at. Academic mentors in the other country then help refine these objectives in relation to the actural placement, designing individual learning activities which bring together the service and the learning. With the supervision of the mentor each student developes a portfolio of demonstrated learning. To this is added a narrative evaluation by the mentor and placement supervisor. The portfolio is brought back and evaluated in discussion with home campus faculty.

Another important aspect of this model of establishment of a program is affiliation with existing, in-country organizations having experience with placements. These may be secular, church-related, social or governmental. The same in-country involvement applies to the need to identify academic individuals and organizations capable of helping to link academic study to experience in community-based studies.

The possibility of service and experiential programs in the so-called Third World raises many interesting and exciting speculations. Much has been made of the need for "intermediate technology," e.g., simple water pumps, agricultural tools, building materials. These countries, however, also have human needs, with the young, elderly, the handicapped and illiterate. Is it possible to speculate about undergraduate students in service situations as a form of "human intermediate technology?" Instead of bring things and techniques, they could bring the energy of their hands and hearts, serving human and community needs, and in turn learning about the realities of culture, language, and problems of developing countries. The potential contained in this is stirring the imagination of many.

The costs of these programs, especially overseas, are always of concern. Given the individualistic structure of U.S. colleges and universities, the basis of funding support may vary from institution to institution. Basically, students pay tuition at their home campuses, and remain registered there for validation and credit purposes. In addition, students pay for transportation and program costs of room and board.

However, from experience colleges affiliated in these programs have developed structures and mechanisms which enable some defraying of costs to students. Because the student remains registered at the home campus, financial aid the student is otherwise entitled to applies to participation in the programs. In addition, instructional costs needed for overseas academic supervision may be applied from the student's home campus tuition. Through these means existing service-learning programs have been made available to students at a cost little more than they would pay at the home campus, or for living at home.

Of particular interest, perhaps, to those interested in exploring these opportunities for their institutions and students, is the consortial infrastructure which has been developed to enable programs to be shared among colleges. This organizational aspect addresses the problem of each college having to invest administrative costs to set a program up, and relieves any one college of the burden of supplying the necessary "critical mass" of students in order to make a program viable.

Through affiliation with The Partnership for Service-Learning colleges have immediate access to, and ownership of, existing programs for their students. Students remain registered at the home campus, and validation is with home campus faculty; thus colleges do not "lose" students by encouraging their participation. In addition, The Partnership provides faculty seminars for on-site experience with the programs, consulting services for program and curriculum development, and resources for further movement into this field. This program-sharing structure has proven effective in utilization of scarce resources in times of limited budgets, and in making these experiences available to wider audience than would be possible on the part of any one institution.

Amidst the optimism which these opportunities may generate, some cautions need to be made, particularly in relation to more traditional programs:

1. pre-departure preparation, academic and cultural, is of great importance, as is selection of students;
2. the support elements for students in the other country, personal and academic, need to be intentional, firmly in place, and well-defined;
3. home campus faculty should be an integrated part of the processes of pre-departure preparation and post-program evaluation and validation;

4. perhaps most vital of all, especially with developing countries, the key to successful affiliation is parity of esteem and mutuality on the part of all concerned. By parity of esteem is meant that all involved believe that both cultures are equally worthy, and that each culture must choose and shape what it accepts from the other. By mutuality is meant that each culture must have an opportunity to give to the other as well as receive, in a way that insures that neither culture becomes dependent on the other, and that both are donors as well as recipients. These principles are the basis for respect on the part of all concerned.

Given these cautions, the reality is that these opportunities exist, have been tested, and have demonstrated a powerful potential to move international/intercultural education to new levels. This form of education may not be for all; some students may be better served by traditional programs.

However, for those to whom opportunity is less a set of problems than an exciting challenge, experiential education in an international/intercultural setting opens important human and educational avenues. As Phillips Ruopp has put it in his article, "The Educational Uses of the World,"

> ...the aim of experiential education is to bring our accumulated cultural resources to bear on the student's encounter with the insistent present. It places the student's situational encounters within the wider context of his knowledge about the human condition. Rather than being imprisoned by his immediate situation, he uses it to understand the larger reality of which it is a part. He orders his experience by developing his power to conceptualize it. He learns how to transform his situational transactions by investing them with meaning. Finally, his personal response to people and events both tests and tempers his character.

Knowing that there are colleges and universities with vision, and that there are students with the openness and sense of adventure to be willing to experience the world at first-hand, together we just might be able, finally, to make a reality of Taylor's trenchent dictum, and truly use "The World as Teacher."

HABITS OF THE HEART: THE STRUGGLE OF TEACHERS TO BE LEARNERS

Richard C. Jacobs, John Hatfield, George Derfer
California State Polytechnic University Pomona

Introduction

The purpose of this presentation is to explore and discuss the struggle of a number of faculty from diverse disciplines to initiate a 32 quarter unit interdisciplinary general education program. This program was designed for students in the science, technological, and professional disciplines, and subsumes all institutional general education requirements in the humanities and social sciences. Eight courses comprise a conceptually coherent sequence. Faculty are obligated to collaboratively develop curriculum, and cooperatively team-teach in teaching/learning modes that include large group presentations, seminars, and group discussions.

The presenters of this paper, seeking to avoid a conference show-and-tell description of program particulars, will use some of the arresting conceptual propositions that emerge from Habits of the Heart.[1] This book by Robert Bellah and associates provides a sensitive exploration of individualism and commitment in American life and projects the endemic struggle in American society between private attachments and public involvement. We will combine this book with an introspective ethnographic appraisal of our own involvement as participant observers of an experimental program called the Interdisciplinary General Education Program (IGE). It is our contention that an analogous situation exists in higher education for faculty between the individualism embodied in the disciplinary specialization and a possible commitment to civic virtue as represented by involvement in the university as a learning community. This specialism is represented in the university by the political division of the academic department.

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[1] Habits of the Heart by Robert N. Bellah, Richard Madsen, William S. Sullivan, Ann Swidler, and Steven M. Tipton (Berkeley: University of California Press, 1985).

Although this important book investigates American society and institutions, the categories of meaning provided by the authors allow a release from insular elements and an appropriate frame of reference for an international audience. This claim is reinforced by the immense value of Habits of the Heart in providing an analytical and reflective basis to evaluate professional involvement in an innovative program that requires new behavior.

Part I

The First Language of Faculty and Student Worlds

John Hatfield

Bellah distinguishes between a "first language" of isolated individualism and a "second language" of communities of tradition, commitment, and memory. I want to use this distinction to help clarify the difference between what I would call the world of the "professor" and "student" on the one hand and the "learner" on the other.

Student and professor speak in a first language which expresses the desires and preferences of isolated selves whose only clear goal is the pursuit of their own satisfactions. They are vaguely aware of a fragmented second language that speaks of commitment and tradition, but this second language is in eclipse and the first language can explain commitments only in terms of personal preferences. Freedom, in this view, exists in an unencumbered presence where all judgments are based on feelings, preferences, and desires.

That is to say, professors seek satisfaction through the intrinsic rewards of teaching and/or the instrumental rewards of research. Students as consumers choose courses they prefer and choose majors which will provide utilitarian satisfactions in the future. Professors want to teach their discipline; students want to pass the course. Students choose general education courses according to convenience, amount of work required, whether the class is 'interesting' or not. Professors prefer to teach courses in which they know and are comfortable with the material. In the classroom, our first language speaks of a relationship of authority between professor and student. Professor informs student, who passively receives the information. Intrinsic values of learning are subordinated to passing the course and teaching the discipline. Indeed, we have found that this transition between the private professional world which Bellah analyzes and the cooperative public world required by the IGE Program is the source of much initial displacement.

Professor and student are supported in their isolated individualism by what Bellah calls 'life-style enclaves,' which comprise the discipline and department on the one hand, and the classroom and private social relationships on the other. These separate 'enclaves' validate each individual, but at the same time require conformity. Professors defend their discipline/department, while students refuse to expose themselves in classroom discussion. To maintain conformity and guarantee efficiency, professional managers direct the overall educational process. Making no normative judgments about the quality or direction of either student's or professors activities, the administrator merely assists and facilitates. In the IGE Program, all participants, faculty and students alike, have made a public commitment of interdependence that emerges from shared experiences.

Bellah claims that we lack a tradition or a context in which debate about mutually perceived normative purposes can be carried out. Thus, there is no base for making a judgment about the purpose of a particular course, or the reasons students prefer one course or another. Classes merely adjust to the marketplace with no concern about their appropriateness in a curriculum of study.

The task implied by Bellah's analysis is to move beyond the enclave of the classroom or the discipline/department to the university itself, where questions of purpose can be faced. These questions come from older and nobler traditions of education in which are embedded standards that can be objectively scrutinized and debated. These standards suggest purposes such as commitment, transformation, and integrity; ideals closer to the 'virtues' than to discipline-oriented notions of skill, methodology, appreciation and the acquiring of information. In a word, these ideals are about a community of learning rather than an enclave of individuals. That community of learning is one in which there are "learners" rather than "students" and "professors". Learners discover a community and a narrative history which is about both who we are individually and who we are as a culture. We have found that, in the IGE Program, one another's story, in exploring together a text, a concept, a theme, is where the fullness of learning and education is realized.

Finally, if we are to move toward this view of learners, it is up to the professor to begin the process. Than can be done without compromise only by practicing learning oneself. That learning in some measure, is what has happened to me in the course of moving from the world of "professor" to that of "learner" Bellah's book has helped me to understand that movement, why it is so often resisted, and why it is no challenging. And the IGE Program has provided me with the concrete opportunity to activate these intentions.

Part II

Developing Civic Virtue in the Public World of the University

George Derfer

My central concern is the analysis of the public arena, as discussed by Bellah and its relevance to the university. We need to approach and analyze the university--its population, its roles and rules, its testimony to individualism, on the one hand--its transformation via a "community of memory" on the other. Bellah defines a community of memory as the past traditional history which is shared and prized by the citizens of the community.

The "concerned citizen" is a key concept. This idea connotes the limitations of the occasional civic gesture by the private citizen. While this concerned citizen is immersed in the throes of individualism, he/she begins to see that "private sanctuaries are threatened", and feels the need to get involved in the community. From the perspective of privatism, such involvement is understood in self-sacrificial terms, "as giving up of the real joys of a good life." Implicit in this discussion, according to Bellah, "...is the idea that one can be a good citizen simply by being passively law abiding, and that one need become actively involved in public issues only when one becomes concerned about threats to the interests of one's self and one's community.

The analogy to the professor in higher education is that the "community of scholars" has been radically displaced over the decades by the bifurcation of experience, the compartmentalization of knowledge, the specialization of skills and methodologies, the privatization of values. For the most part, then, "the community of scholars" has little undergirding purpose or principle, has no transcending loyalty and commitment. Fragmented experience tends to present itself in terms of segmented and segregated disciplines of information. For the faculty member, a perceived threat to one's area of specialty can be a motivation for "getting involved." This is the stuff of which turf wars are made. And this was the greatest political challenge to the success of the IGE Program.

But what happens when this "perceived threat" passes? How do faculty so momentarily "involved" account for the restless motivation to reach out, to become more political? It becomes increasingly clear that the specializations of skills, while certainly necessary and constructive, is not an end in itself, not the larger whole of the matter.

This hasty sketch of the "concerned citizen" (with its counterpart in the "concerned professor") sets the stage for grappling with Bellah's concept of "the civic-minded professional." Essential to this position is the subtle implication that, like all professionals (that is, those people whose "identity is bound up with the possession of certain specialized skills, developed, certified, and evaluated by a national system of educational institutions and professional associations"), professors are caught up in the limitations of "civic-mindedness." The very nature of specialization tempts one to believe that no one individual can be skilled in all areas and aspects of life, of thought, of evaluation. This becomes, in terms of civic duty, a self limited restriction to activity within one's own department.

More often than not when faced with competing claims the civic-minded professional seeks to create a "natural technical mechanism"--which at the university is the efficiency of institutional organization and the objectivity of disciplinary knowledge claims. Unfortunately, no such "neutral technical mechanism" is possible. It seems increasingly clear that all human creations are not only value-ladened but, as well, a matter of value-preference and choice--the stuff of morality, of values. This might lead to a more searching, maybe metaphysical, concern for species-specific, even natural, values and ethics. By its very nature this confrontation, when taken seriously, invites the person-professional, certainly the faculty member in this case, to become more acutely aware of forces and factors--which transcend individual particularity. This awareness is the threshold of a civic language.

The IGE Program, through team-teaching, cooperative curriculum development and democratic governance, offers a vision of a social ethos who can serve, in difficult times, for a model of the world which is yet to be.

Part III

Transforming University Teaching

Richard C. Jacobs

In discussing the culture of separation and the proposition that modernity is "the culture of separation", the authors of Habits of the Heart claim that "A sense of fragmentariness is as characteristic of high intellectual culture as of popular culture." The university is a culture of separation and specialization. The impact on faculty is twofold. Not only are the broad, generic issues that could illlminate the human condition absent, but the intellectual orientation of faculty become an aggregate of discrete findings, defined within the internal logic and inner relevance of the discipline, and presented didactically in the classroom as the oral replication of the history of that discipline. If this is so, the challenge is apparent, for how can we become whole again and develop at the university a "culture of coherence?" Bellah pointed out, "...we cannot, after all, finally separate who we are from what we are studying." It is difficult for university faculty to assume a false sense of humility in suggesting the tentativeness of knowledge when a distinct dialectical contrast is not available within disciplinary boundaries. Team-teaching by faculty from diverse disciplines in the IGE Program provides this opportunity.

Eventually the prerequisite resources for transcending the parochialism of past professional training reside within the ability of faculty to construct a new social and moral ecology on the university campus. Here again we borrow from the discussion in Habits of the Heart, where in the concluding chapter, the authors call for a reconstituting of the social worlds. It would be difficult to retrieve "communities of memory" that are traditional sources of community in higher education. It has been almost one hundred years since the dispersal of knowledge into university departments and the loss of a classical education that was based on shared meanings.

Many faculty in the humanities and social sciences at Cal Poly University found the IGE Program stimulating and rewarding because it allowed them to escape from an "individual careerism."

Faculty in the IGE Program, in its history of three years of development and three years of implementation, have found the community in the difficult struggle to become learners again. The sharing of a human process that requires expanded understanding and reasonable negotiation is enriched by the intellectual exchange involved in the identification of the essential themes and issues that transcend time and place, such as justice, freedom, rationalism, and are worthy of inclusion in the curriculum. At the end of each year the program faculty withdraw to a retreat where we discuss the program and issues that emanate out of our efforts. Next year students will join us on the mountain top. Students have also joined our program steering committee. We are forging a community where a new social and moral ecology is becoming both a renewed professional satisfaction and a commitment to other human beings. We are forming the "habits of the heart" necessary to make teaching a connection to a wider human community and to distill knowledge into a wisdom that has civic application.

Interdisciplinary General Education Program (IGE)

The Program

Students majoring in degree programs outside of the Schools of Arts are urged to take coursework from the INTERDISCIPLINARY GENERAL EDUCATION PROGRAM (IGE). This program is designed for students in professional and Math based degree programs (Engineering, Science, Business, Agriculture, Environmental Design, etc.) and provides an integrative-thematic approach to the Humanities and Social Sciences components of General Education (categories I, III, IV, V, and VI) for a total 32 units of the 48 lower-division units required. This program is designed as a 2 and one-half year program in which the participant studies both major coursework as well as courses designed to partially meet the University General Education requirement. Applicants for this program must take both the EPT (score of 150 or better) and the ELM (pass) or have these tests waived because of other test scores (e.g., SAT, ACT, etc).

Special Instructional Features

All courses are teamtaught by faculty from a variety of disciplines. Courses feature more individualized instruction and present study materials in a challenging and thought provoking way. There is one instructor for each twenty-five students. Courses are organized in such a way so that the participants experience both large and small lecture format as well as seminars and tutorials. Field trips, special events, guest lecturers are all featured. Students are encouraged to be active class participants and learners.

TOTAL 32 QUARTER UNIT INTERDISCIPLINARY GENERAL EDUCATION PROGRAM: COURSE GOALS AND OBJECTIVES

All eight courses of the two and one half year IGE Program share the following common goals:

1. Comparative consideration of diverse cultural references.
2. Exploration of historical and social context of themes and concepts.
3. Artistic forms of expression comprise a significant means of exploring course themes.
4. Consideration of normative implications and consequences of human knowledge and experience

Learning Outcomes

1. Development of effective communication skills with an emphasis on expressive and expository writing skills.
2. Development of critical and reflective thinking skills.
3. Independent integration of knowledge and experience through active student learning.

COURSE DESCRIPTIONS

First Year

CPU 120 Consciousness and Community: Origins and Development of Human Societies (4)
Chronology and civilization; origin of consciousness and myths of origin; symbol and ceremony; people and the environment. Prerequisite: EPT score of 150.

CPU 121 Rationalism and Revelations: The Ancient World (4)
Myth and history; tragedy, humanism, justice, and freedom; subject and citizen. Prerequisite CPU 120.

CPU 122 Authority and Faith: Feudalism and the Renaissance (4)
Forms of social and economic organization; cultural and intellectual renewal; varieties of spatial organization; secular and sacred forms of aesthetic expression. Prerequisite: CPU 121

Second Year

CPU 220 Culture and Contact: The Expansion of the West (4)
Exploration and ethnocentrism; the nation state and national artistic cultures; the scientific revolution. Prerequisite: CPU 122.

CPU 221 Reform and Revolution: The Age of Enlightment (4)
Concepts of progress and individual rights in a time of political revolution; changes in social organization; restructuring of philosophical, scientific, and aesthetic thought. Prerequisite: CPU 220

CPU 222 Individualism and Collectivism, Competing Ideologies: The Industrial Age (4)
The machine and society; romanticism and realism; capitalism and socialism; population movements. Prerequisite: CPU 221

Third Year

CPU 223 Promise and Crisis: The Modern World (4)
Nationalism and internationalism; world wars and nuclear threat; concept of the global village; ecological dilemmas; modernism and post modernism in the arts. Prerequisite: CPU 222.

CPU 224 Connections Seminar. Exploration and Personal Expression (4)
Research and presentation of an interdisciplinary project; synthesis and integration of selected IGE Program themes.

PLEASE SEE MAJOR DEPARTMENT FOR INFORMATION REGARDING ADDITIONAL GENERAL EDUCATION REQUIREMENTS.

For Further Information
Write or Call:
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Undergraduate/Graduate Studies
or
Dr. Richard Jacobs
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California State Polytechnic
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Pomona, California 91768
Phone: (714) 869-4770

"California State Polytechnic University, Pomona [illegible] Title IX, Title VI, and Section 504 [illegible]"

HOW INTERDISCIPLINARY G.E. PROGRAM MEETS UNIVERSITY REQUIREMENTS

This 32 unit program meets the following portion of the University General Education requirements. (Engineering students see adviser for specific additional coursework required by major.)

CATEGORY I
Communications in the English Language
Pattern I or IIA—4 units (first year) Freshman Composition (ENG 104) equivalent. Students select additional coursework from regular G.E. Pattern I or II courses. Credit received by completion of CPU 120, 121, and 122.

CATEGORY II
Science and Mathematics
Not included. Select courses from regular G.E. lists as specified by major.

CATEGORY III
Arts, Literature, Philosophy and Foreign Languages
A, B, and C: 8 units (first year)
Select additional 4 units course from any of categories.
Students receive credit by completing CPU 120, 121 and 122.

CATEGORY IV
Social Sciences
A—4 units—Select from regular G.E. list
B—4 units (second year)
C—4 units (second year)
Students receive credit by completing CPU 220 and 221

CATEGORY V
Integrated Being (Satisfied)
3 units (first year)
1 unit (second year)
Student receives credit by completing CPU 224

CATEGORY VI
U.S. History, Constitution, and American Ideals (Satisfied)
8 units (second year)

CATEGORY VII
Upper Division General Education
Not included in 1 G.E. Courses needed to meet this requirement are listed in the upper-division G.E. section. See adviser for specific coursework required by major.

AGAINST "TWO CULTURES" ON THE CAMPUS IN SEARCH OF A MODEL FOR THE EDUCATION OF PROFESSIONALS

B.H. Mikolji and T.R. Plough
Rochester Institute of Technology

A quarter of a century has now passed since Baron Snow delivered his Cambridge Rede lecture and published the *Two Cultures*,[1] pointing to the cleavage he perceived as existing between the *artes*, especially the *artes liberales* now in the form of humanities, and the *techne* in the vestments of modern science and technology. The practitioners -- and teachers -- of either, he said, knew little, if anything, about each other. The communication between them was difficult, indeed impossible, an intolerable condition, he thought, in view of the fact that the tools and the stock in trade of neither are capable, on their own, to provide for human needs.

Since that time there appeared at least half a dozen works on higher education,[2] each of which, in its own way, proposing curricula that would guarantee that future professionals would be adequately prepared for their subject-related task as well as for participation -- indeed leadership -- in cultural and social affairs and decision making. Additionally, there were numerous statements by leading educational foundations and associations,[3] as well as major proclamations by governmental agencies.[4]

More directly related to higher technical education, a continuous stream of related works actually predates Snow, although the bulk seems to coincide with the time of hightened sense of urgency. Thus, under the auspices of the United Nations Educational, Scientific and Cultural Organization (UNESCO), Professor Julius Gould of the University of Nottingham in England analyzed patterns of curricular inclusion of social sciences at technical colleges and universities in a number of countries (Czechoslovakia, France, West Germany, India, Japan, Sweden, the Soviet Union, United Kingdon, and the United States).[5]

In the United States, American Society for Engineering Education (ASEE) commissioned Professor Sterling P. Olmsted, then of Rensselaer Polytechnic, to prepare a model for utilization of humanities and social sciences by American institutes of technology (e.g., Cal Tech, MIT, RIT, VPI) that were originally developed after the French *ecoles polytechniques*.[6]

Similarly, though involving a larger array of instructional subjects, in Germany, this time sponsored by the Association of German Engineers (VDI), Professor Martin Polke of the Leverkusen Institute and his colleagues investigated through an extensive survey the curricular conditions "as they are" and "as they ought to be" in that country, but also reflecting pretty well the situation in areas of German cultural influence.[7]

A number of symposia and comparable academic proceedings also devoted their programs, either wholly or in part, to the same question (Bielefeld University Colloquia on Professions and Education in 1973 and 1974; New York Sociological Association in 1977; International Congress for Engineering Education, Darmstadt, 1978; Symposium on Post-Industrial Culture, Technology, and Public Sphere at the University of Wisconsin, 1979; Miami University National Conference on Interdisciplinary Studies, 1979; Symposium on Engineering Education, Ulm, 1982; American Society for Engineering Education, 1983; and International Society for Engineering Education, Budapest, 1985), to some of which the presenters of this paper have previously contributed.[8]

Additional references could be listed in large quantities, all having significant, direct or potential, implications for curricular structuring in higher education -- for instance, a growing literature, albeit of varying significance and widely divergent philosophical orientations, on the interfacing of science, qua science or qua practice, and humanities, respectively humanities-based policies and practices[9]; the surge of STS (Science, Technology, and Society) type of college and university courses, programs, and departments[10]; the extensive work by the Tavistock group on socio-technical systems[11]; the appearance of major periodicals dedicated entirely to the issue[12]; even the publication in Moscow of the collectively authored anthology Man, Science, Technology.[13]

All this gives the impression that we may well be caught up in one of those times in history when ideas about the kind of knowledge man should seek come into conflict. Such were the clashes between philosophy and poetry or rhetoric in the Antiquity, between pagan and orthodox learning in early Christianity, theology and liberal arts in the Middle Ages, between the scholastics and the humanists during Renaissance, the traditionists and the modernists during the 1600's and 1700's, and the scientists and the religionists in the 1800's. Humanities, in one guise or another, it would appear, have always been in the contest. Presently, in their high form, they are confronting science and technology, in their high form, in search of a new balance, or, at least, that would be the contention of the "two cultures" argument.

But that is not the subject of this paper, although we are forced to agree that, whether sparked by intellectuals like C.P. Snow or propelled by internal dynamics of development within respective disciplines (or discipline groups) themselves, efforts at integration of knowledge into a new paradigm are a reality. In institutions of higher learning, particularly in technical professional schools, that is reflected unmistakably in numerous structural and functional changes.

Looking, however, at all these endeavors, as well as existing and proposed educational programs, we are equally forced to agree that we are far from being through with the conflict. And that results in the additional burden for the educators: trying not to take sides, they must carry both loads, the artes and the techne, while aiming at instructional efficiencies within the time framework culturally allocated as proper and cost factors that are economically realistic.

What emerges is an enormous diversity,[14] but also an indication of a continuing, almost frantic pursuit of a uniform formula, the "best," universally acceptable, almost utopian model amidst reports of widespread dissatisfaction and ineffectiveness. What is more, there also emerges a recurrent conceptual split between models of "instrumental" integration of curricular subjects from humanities and social sciences with subjects from natural sciences and technology, and models viewing the former (loosely termed the "liberal arts") as matters of personal enrichment and means of ethical formation for the students (and ultimately practitioners) of the latter and, therefore, requiring a "pluralistic" curriculum.

The commitment to the one or to the other of these conceptual approaches entails widely divergent, though predictable -- thus plannable and presumably controllable -- consequences. Unfortunately, few existing programs have been created or are being operated on the basis of paradigmic niceties even of such simple nature, and the jump between intentions, assuming they were reached along the lines of one of these models, and practical realities introduces a host of intervening variables or "filters" which tend to acquire causative significance "of their own. Thus, scheduling time, the curricular "carrying capacity," standards of occupational conventions, financial priorities, personnel and vested interests, tradition, and bureaucratic inertia, all enter into the picture, resulting in a hybrid conceptual model of forced (existentialist?) eclecticism, virtually guaranteeing results not in line with stated or implied intentions.

To verify that thesis, we surveyed student substantive knowledge (not their attitudinal stance) in subjects conventionally associated with liberal arts at our own institution, a middle-sized, private school of higher technical education of recognized national standing located in the Northeastern section of the United States. The survey took place prior to the introduction of a "structured" program obligatory for students irrespective of their majors, designed to move humanities and social sciences from a marginal position to that of a major and equally emphasized status. For purposes of comparison, we intend to repeat the survey after a reasonable period of transition and measure the effectiveness of introduced changes. Thus, the undertaking should be seen in terms of a typical before-and-after research strategy.

We administered a simulated test such that high passing scores would be indicative of greater, and lower scores would be indicative of lesser command of subjects in question. Since student exposure to subjects in question ranged from no courses ever taken to seven or more, the expectation was that students with more exposure, as an aggregate, would perform better than those with less exposure, assuming, that is, that there is a cause-and-effect relationship between teaching and learning in a formal, purpose-justified setting.

A random, though internally stratified, sample of 259 students involved lower classmen (91), upper classmen (94), and, in order to control for the possibility of uniqueness of the "indigenous" population, transfer students who matriculated as upper classmen on the basis of under-classmen work elsewhere (74).

The scores achieved by the students in the sample ranged from a low of 0.50 to a high of 9.67 (out of a possible perfect score of 10) in a distribution approximating the bell-shaped curve one would normally expect for values achieved when applying a valid instrument to a population known to differ randomly on characteristics being measured. The median (5.00) and the mean (5.28) practically coincide, and the standard deviation (1.78) confirmed the expected distribution within reason.

But, even though the impressionistic and anecdotal type of information available before the survey led us to expect low levels of correlation between hypothesized variables -- for, after all, that was the reason for introducing the curricular reform in the first place -- the data obtained indicated almost identical platykurtic unskewed bell distributions of achieved scores also for lower classmen, upper classmen, and transfer students, for students who had varying levels of exposure to courses in purview, and, finally, when controlling for both.

In each case, the scores had a wide range, practically always including the highest or near highest value, as well as very low, if not the lowest, values. Means and medians again closely coincided, and all standard deviations were invariably high.[15] The originally intended use of conventional tests of significance, the chi-square routine and the difference-of-means test, was superfluous. These findings well support our thesis, and we are convinced that it is generalizable.

There were indications of some exceptions, however, that resulted from attempts to carry the multivariate analysis beyond the point conventionally justified by the number of cases available. They point to student background, the major, and the timing of exposure to course material in humanities and social sciences as intervening variables of significant salience. The first of these has been well known in literature for more than a generation,[16] and it deals with social and economic conditions beyond the influence of instructional policies of individual institutions, possibly also beyond manipulability in contemporary social systems, and thus, simply, a given.

The second, very plausibly, pertains to actual and perceived compatibility (relevance, needs) between the disciplines, the latter of which -- the attitudinal atmosphere -- was investigated by Dean Emeritus VanderMeer of Pennsylvania State on the basis of national and localized sample surveys replicated over a time interval of about twenty years. In these efforts, the use of the semantic-differential technique indicated that, in spite of a decline in regard for liberal arts per se, in this instance by engineering faculties, the "favorability index" and obtained statements about curricular requirements perceived as important by the repondents strongly suggest, contrary to popular beliefs, "considerable enthusiasm" for specific courses in humanities and social sciences.[17]

But the last suspected intervening variable, the timing of student exposure, could very possibly be the key to the enigma addressed in this paper, and it appears to tie in quite well with the readiness stage, learning curve, and over-saturation aspects of the learning theory. It seems also to have been the thought behind innovative post-secondary institutions, based on a rearrangement of instructional materials traditionally allocated to differing levels of the educational system.[18]

That thought, we would argue, holds the promise for at least one half of an integration model of prime utility for programs of higher education in the fields of science and technology. A tech prep, if not a totally comprehensive preparatory in-between stage, combining upper grades of secondary and much of the lower division post-secondary curricula (communications, math, science, art, social sciences), must be viewed as a welcome alternative to the present two-track system separating the academically and the vocationally destined, in itself an irony in societies in which equalitarianism is the byword.

But even ideological considerations aside, neither of these two tracks is adequately functional. In practice, the vocational tracks in many schools develop abilities well below those required in the contemporary world of work while, at the same time, effectively precluding transfers into "academic" programs. The academic tracks, in turn, carrying a heavy legacy of "classical" tradition, are often no guarantee either for adequate preparation for higher education in modern professions, although they effectively preclude direct entrance into meaningful employment.

Tech prep should permit both alternatives. This is all the more important since surveys show no abrupt dichotomies in professional qualification requirements for scientific and technical personnel.[19] Instead, a graduated, staged, talent-and-opportunity based occupational structure is seen as intertwined with continuous, often simultaneous and intermittent, education. Formal programs in institutions of higher learning, therefore, must adapt to that reality by allowing for more versatility than the conventional curricular structure foresees.

Tech prep should also pick up the formative, "enrichment" aspects which the liberal arts (the "pluralistic" according to one conceptual model) are intended to serve in post-secondary institutions. That is what we meant by one half of the integration. The other half, consisting of the "instrumental" aspects of humanities and social sciences, should, then, pose no problem for a fully functional integration within curricular models for education of professionals, making the rhetoric of "two cultures" on the campus obsolete.

However, for that to take place, it will be necessary for educational polemic to expand and include the content matter -- in this case scientific and technological knowledge -- in addition to, and some would say prior to, concerns with the cognitive processes, "self-actualization," social goals and issues, academic rationalism, and so on. In addition, systems of student guidance will have to undergo a serious reorientation away from their present "social sorting" function. And, finally, a close cooperation with industry will have to assure a continuous flow of feedback information so vital to the cybernetics of educational institutions.

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[9] E.g., J. Ellul, La Technique, Colin 1954; J. Bronowski, Science and Human Values, Messner 1956; T. Kuhn, Structure of Scientific Revolutions, Chicago 1962; H. Marcuse, One-Dimensional Man, Beacon 1964; J. Habermas, Technik und Wissenschaft als Ideologien, Suhrkamp, 1968; R.A. Bauer, Second Order Consequences, MIT 1969; W. Carlton, Technology and Humanism, Vanderbilt, 1970; G. Ropohl, Eine Systemstheorie der Technik, Hanser 1979; M.A. Borough, Technology Assessment, North Holland, 1980; J. Weinstein, Sociology/Technology, Transactions, 1982.

[10] The most recent EVIST Resource Directory (American Association for the Advancement of Science) lists about 120 programs and 900 continuously offered courses in the United States alone.

[11] Tavistock Institute of Human Relations, London.

[12] E.g., Technology and Culture; Science, Technology, and Human Values; Technology and Society; Impact of Science on Society.

[13] Chelovek-Nauka-Technika, Akademia Prague, 1973.

[14] For a presentation of "congealing" patterns coinciding, respectively, with forms of technological development, socially institutionalized "division of labor," the type of economy (market vs. planned), etc., see Mikolji, "Social Science. . . " in Melezinek, op. cit.

[15] Test scores achieved by student standing and number of courses taken:

		1-3	4-6	7+	?	ALL
LOWER CLASSMEN	N	35	47	6	3	91
	R	1.33-8.50	1.67-8.33	1.67-9.00	1.17-5.33	1.17-9.00
	M	5.00	5.33	6.17	5.17	5.17
	X	4.98	5.27	5.89	3.49	5.21
	SD	1.92	1.74	2.42	1.92	1.74
UPPER CLASSMEN	N	7	12	67	8	94
	R	2.33-8.33	1.33-7.33	2.33-9.67	3.00-8.00	1.33-9.67
	M	4.83	4.50	5.33	6.00	5.04
	X	4.68	4.42	5.57	5.67	5.28
	SD	1.79	1.74	1.68	1.53	1.74
TRANSFER STUDENTS	N	23	26	17	8	74
	R	0.67-6.84	1.33-9.33	0.50-9.00	2.33-7.83	0.50-9.33
	M	4.33	5.00	4.17	5.17	4.67
	X	4.33	4.76	3.85	5.38	4.67
	SD	1.81	1.76	2.05	1.73	1.38
ALL STUDENTS	N	65	85	90	19	259
	R	0.67-8.50	1.33-9.33	0.50-9.67	1.17-8.00	0.50-9.67
	M	4.67	5.17	4.25	5.33	5.00
	X	4.72	4.99	5.17	5.27	5.08
	SD	1.89	1.79	2.06	1.78	1.78

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[19] Twenty of the fastest growing occupations from 1982 to 1985 called for advanced but not necessarily highest education (Parnell, op. cit.), and establishments in "high tech" or on the frontiers of science frequently depend on top talent development through extra-institutional channels.

INTERDEPARTMENTAL COOPERATION AND CURRICULAR COHERENCE: THE CASE OF UNDERGRADUATE LEGAL STUDIES

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American Bar Association*

American higher education has long been characterized by compartmentalization in the delivery of knowledge. This occurs by academic disciplines or their institutional counterparts, departments. As educational institutions have grown larger in response to the democratization of access, departments have also grown larger. Frequently, departments now constitute free-standing intellectual units within the university. One result is an insularity from complementary and enriching ideas about scholarship and, especially, teaching in allied fields.

Recent commission reports in the United States about the state of undergraduate education have observed the phenomenon of faculty isolation with dismay. The Study Group on the Conditions of Excellence in American Higher Education, for example, warns of "departmental politics" overwhelming liberal learning objectives. It proceeds to recommend that reforms be based on "collaboration among faculty from different departments." (1) Similarly, the Association of American Colleges, in its Project on Redefining the Meaning and Purpose of Baccalaureate Degrees, laments the lack of coherence in the undergraduate curriculum, both within and across departments. (2)

Interdisciplinary programs, increasingly common over the last twenty years, offer one response to the problems cited by these commission reports. Among the most visible and widespread of such programs are ones in "legal studies" (3) at the undergraduate level. As a group, these programs are devoted to an exploration of law, legal process, legal institutions, and law's role in society from historical, sociological, economic, political and cross-national perspectives. There are currently in excess of 30 legal studies programs, firmly grounded in the liberal arts, in the United States and Canada; additional ones can be found in Australia, England and other countries. In the remainder of this paper, I will illustrate how the subject of legal studies offers a fruitful avenue of interdepartmental cooperation in the liberal arts, one that benefits both faculty and students.

Method

This paper is based upon two data sources: (1) catalogues and curricular program descriptions of more than twenty legal studies programs in the United States and Canada; and (2) a survey of liberal arts faculty and deans, undertaken in the Fall of 1984 at a representative sample of 100 colleges and universities in the United States, including those known to have undergraduate legal studies programs. Two hundred fifty-seven faculty and fifty-three deans, from ninety of the institutions, responded to the survey of law-related courses and programs. Faculty span a wide variety of liberal arts disciplines; about half teach in political science or sociology, with smaller numbers in history, philosophy, psychology, economics, and other fields. Due to space limitations, the survey cannot be appended but is available upon request from the author.

Interdepartmental Cooperation: Frequency, Constraints, Potential

Undergraduate courses about law are offered in many departments including most of the liberal arts. (4) Courses in constitutional law are the most frequent, but courses in the sociology of law, philosophy of law, economics and law, legal history, and other areas are offered at many institutions. (5) In theory, these courses about law are different from one another in that they view law from the prism of the particular discipline. On the other hand, in practice these courses confront common issues from complementary, if not identical, viewpoints.

Socio-legal scholarship, a now well-established tradition (6), by its very name suggests a transcendence of disciplines, but this is not necessarily the case with respect to the teaching enterprise. At many colleges and universities, faculty are not even personally acquainted with some, many or all of the other liberal arts faculty also teaching about law and legal phenomena. More precisely, only 45% of the faculty in our survey report knowing "all or most" such faculty in other departments, whereas 40% know only "some," and 15% say they know none of the other faculty teaching about law in allied fields. In the aggregate, then, more than half of the faculty now teaching law-related courses are relatively isolated from parallel instruction.

Isolation is not randomly distributed across colleges, however; it is related to institutional size. The larger the institution, the more likely that individual faculty do not know others doing such teaching. The relationship is actually quite substantial and statistically significant (7), as Table 1 documents. Insularity becomes acute, our data suggest, once institutions exceed roughly 7,500 students.

Table 1. Level of Liberal Arts Faculty Contact across Departments, by Institutional Size

"Are you personally acquainted with the faculty who teach law-related courses in other departments?"

Number of students	Yes, all/most	Yes, some	No	(N)
2,500 or less	80%	13%	7%	(15)
2,500 - 7,500	64	30	6	(53)
7,500 - 15,000	34	49	17	(76)
15,000 - 25,000	42	40	18	(65)
25,000 or more	32	45	23	(38)

$X^2 = 23.9$ (df=8)
$p = .002$

Nevertheless, faculty in our survey express the hope that greater contact and collaboration will take place among their law-related teaching colleagues in other departments. Fifty-one percent responded "Yes" to a question as to whether increased contact with other faculty would be beneficial. Only 6% said "No," whereas a substantial 43% hedged a bit by indicating "maybe." Unlike for actual contact, the figures for desired contact do not fluctuate significantly according to institutional size. Thus, faculty at large institutions are equally as supportive of increased contact across departments as those at smaller institutions. Indeed, faculty at the very smallest institutions sometimes express the sentiment that they already know their colleagues in other departments all too well.

Finally, we explored a different form of potential collaboration -- liberal arts faculty contact with the law school on their campus. In our sample, slightly more than half (57%) of the faculty teach at an institution without a law school. But even for faculty at institutions having a law school, the amount of reported contact is low. Only 13% say that their contact with law school faculty is "substantial," whereas 61% report "some" contact, and fully 26% report no contact whatsoever.

Contact by liberal arts faculty with law school faculty has significance beyond collegiality. The greater the contact with law school faculty, the greater the liberal arts faculty member's dissatisfaction with the diversity of the law curriculum of his or her own department. Only 21% of faculty with no contact with their law school report curricular dissatisfaction, but the figure rises to 71% for those with substantial contact with their law school (Table 2).

Table 2. Level of Liberal Arts Faculty Satisfaction with Departmental Law Course Offerings, by Amount of Contact with Law School Faculty

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	Amount of Contact with Law School Faculty		
	Substantial	Some	None
Satisfied with departmental courses			
Yes	29%	66%	79%
No	71	34	21
N	(14)	(65)	(28)

$X^2 = 10.4$ (df=2)
$p = .005$

We do not have direct data about the reasons why such contact is associated with curricular dissatisfaction. Yet we can speculate that greater sensitivity to legal rules and legal reasoning is one by-product of the liberal arts faculty member's contact with faculty from the law school. This seems to be reflected in the courses most likely to be suggested by the dissatisfied faculty to be added to their department's curricula -- jurisprudence, philosophy of law, and administrative law.

Legal Studies Programs: One Form of Interdepartmental Cooperation

Legal studies programs offer one concrete vehicle for faculty contact and collaboration about teaching as well as curricular coherence for students. While sharing a common purpose, these programs vary in a number of ways, including organizational structure. Some programs offer free-standing majors, others cooperative majors, still others only minors or areas of concentration. Law schools are typically not formally connected with undergraduate legal studies programs, though informal cooperation sometimes occurs on campuses having a law school.

Legal studies programs also vary in their implementation. Some are little more than a collection of courses, not seriously coordinated by faculty. Other programs offer an interdisciplinary introductory course (frequently, team-taught and/or team-developed), provide both general and individualized curricular guidance to students in their selection of courses, and sponsor events (e.g., speakers, brown-bag lunches, etc.) that enrich the quality of student learning. These latter programs seem distinguished from the former not by budgetary largesse but by an activist, dedicated program director. The director can resurrect a moribund program or, alternatively, allow a vigorous program to slide into oblivion. This "key person" phenomenon probably occurs because the programs, with few exceptions (8), have no departmental status.

Evaluation of legal studies programs, at least by faculty and deans, is generally quite positive. About two-thirds of the faculty report unqualified satisfaction with the intellectual quality and orientation of existing legal studies programs on their campuses. Deans, likewise, are supportive. Only with respect to coordination among participating departments is there a mixed level of satisfaction among faculty and deans, especially at larger institutions. Students, too, implicitly evaluate the programs favorably; faculty and deans consistently report that they are satisfied with their programs' ability to attract students.

If legal studies programs are relatively inexpensive as well as widely praised within an institution's walls, why haven't they diffused more widely? Faculty and deans at institutions not having such a program offer some perspectives. Many faculty and deans are supportive of the value of such programs (40% of the faculty, 24% of the deans, unqualifiedly so). Nevertheless, some fear a "pre-professional" (i.e., pre-law) emphasis in such a program, one that might compromise the liberal arts character of the institution. This fear is largely confined to a small number of faculty and deans at liberal arts colleges. (9)

More widespread mention was given to other obstacles. Budgetary considerations are real, even with a small price tag (e.g., released time for a program director or participating faculty). Departmental politics are a consideration. Which departments stand to gain or lose (students, faculty) by the adoption of a legal studies program? In some instances, political compromises have been struck to insure that no department loses. (10) Lastly, the energy and resources of the "key person" are not always available. Many campuses seemingly lack the necessary individual faculty leadership and commitment to establish, as well as successfully maintain, a legal studies program. Most of all, institutions -- especially, large research universities -- fail to reward curricular innovation or teaching excellence among its faculty (11), a point repeatedly cited by critics of the quality of undergraduate education.

Concluding Thoughts

The subject matter of law offers an unusually rich opportunity for multidisciplinary collaboration in the college and university setting. The teaching of "black letter" law, or primarily legal doctrine, is not the goal of liberal arts faculty nor should it be. That is the work, at least in the United States, of the professional law school. Rather, the humanities, social sciences and natural sciences offer special windows of opportunity for viewing law and legal phenomena. Where interdepartmental cooperation -- whether structural or informal -- takes place, the results seem beneficial for faculty and students. For faculty, the opportunity to meet and know colleagues in other departments reduces the feeling of isolation that comes with increased subfield specializations within disciplines. Furthermore, such contact offers opportunities for collaboration in research and teaching, thereby providing a form of intellectual reinvigoration within the campus. The benefit is quite direct for students, who can achieve integration of knowledge across fields, one of the acknowledged critical goals of liberal learning.

BIBLIOGRAPHICAL NOTES

* Staff Director, Advisory Commission on College and University Nonprofessional Legal Studies. Opinions and analyses expressed in this paper are those of the author and not necessarily those of the American Bar Association or its Advisory Commission.

(1) "Involvement in Learning: Realizing the Potential of American Higher Education," a report of the National Institute of Education's Study Group on the Conditions of Excellence in American Higher Education, October, 1984.

(2) "Integrity in the College Curriculum: A Report to the Academic Community," a report of the Association of American Colleges' Project on Redefining the Meaning and Purpose of Baccalaureate Degrees, February, 1985.

(3) "Legal Studies" is a generic term that refers to liberal arts-grounded programs. Other frequently-used names include "Law and Society" or "Law and Justice."

(4) Law-related courses are also offered in professional school programs at the undergraduate level -- e.g., in business, journalism, and education. These courses and their faculty were not the focus of our survey.

(5) For further details about the frequency and types of law-related courses offered in the undergraduate curriculum, see John Paul Ryan, "Law, Liberal Education and the Undergraduate Curriculum," 10 Legal Studies Forum (1986, forthcoming).

(6) Socio-legal scholarship bridges the worlds of social science and law. Begun in earnest in the 1960s as a response to legal realism, this scholarship may be found in such journals as Law and Society Review, Legal Studies Forum, and Law and Human Behavior, among others.

(7) Strictly speaking, tests of statistical significance are intended for use only with random samples. Our sample was not randomly drawn; we use the test here only for illustrative purposes because we wish to infer to a larger universe. For further discussion of such uses, see Ramon E. Henkel, Tests of Significance (Beverly Hills: Sage Series on Quantitative Applications in the Social Sciences, 1976).

(8) Two notable exceptions are the University of California at Berkeley and the University of Massachusetts at Amherst, which have departments of legal studies with distinct faculties.

(9) Despite such fears at some liberal arts colleges, others have established programs -- among them, Oberlin and Antioch Colleges.

(10) Cooperative majors represent one form of political compromise, wherein the program becomes a second major permitted only in cooperation with a primary major drawn from one of the program's participating departments.

(11) Education research has consistently found that scholarly and teaching effectiveness are distinguishable, and not highly correlated, faculty traits. See, for example, Stanley J. Michalak, Jr. and Robert J. Friedrich, "Research Productivity and Teaching Effectiveness," 52 Journal of Higher Education (1981), pp. 578-597.

ISSUES IN STUDENT ASSESSMENT

FRIDAY, 18 JULY

0900 - 1030

EXPERIENCES WITH CONTINUAL ASSESSMENT

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The Assessment Scheme at Newcastle Polytechnic

Newcastle Polytechnic has offered a four year thin sandwich B.A. (Hons) Business Studies degree validated by the Council for National Academic Awards (CNAA) since 1968, for which the Polytechnic is required to submit the course for revalidation from time to time.

In 1980 the CNAA revalidated the B.A. (Hons) Business Studies degree; part of the changes and amendments made to the scheme were to the assessment regulations. Continual assessment being introduced for the first time.

The revised assessment regulations divide the course into two parts, PART 1 and PART 2. The first two years of the course make up Part 1 which is a five term foundation course common to all students, and consists of an assessment in each "Crick" type subject, the subject mark, being a weighted average of course-work marks and an examination mark from the Part 1 examinations held at the end of Part 1. Years 3 and 4 constitute Part 2 in which each student studies business policy, and undertakes a project in addition to choosing one of the four options currently on offer, each option consists of four option subjects. The part 2 assessment at the end of the course is based on a final agreement mark calculated for each student as:

Subject	Weight in aggregate mark	
Part 1 mark	10%	
Part 2		
Business Policy	18%	
Project	18%	
Option Subject 1	18% }	the lowest of the four option marks is dropped
Option Subject 2	18% }	
Option Subject 3	18% }	
Option Subject 4	18% }	

The project is marked by the student's project supervisor and an internal examiner as well as an external examiner, the final mark for the project being agreed between the three markers.

Business Policy is assessed both by course-work and an examination at the end of the course. By its nature Business Policy is heavily course-work biased with ten pieces of assessed course-work set during part 2, of which the average of the best eight go forward as the course-work mark. The final subject mark for Business Policy is a weighted average consisting of 50% of the course-work mark and 50% of the examination mark. For the option subjects this weighting is 30% of the course-work mark and 70% of the examination mark. The student will be awarded an honours degree classification according to the final aggregate mark achieved by the student, the following being the classification rules:

Class awarded	final aggregate mark
First	70+
2(i)	60 - 69.9
2(ii)	50 - 59.9
3	40 - 49.9

The first cohort of students assessed under these new regulations occurred in 1982. The Board of Examiners expressed reservations about the way in which the continual assessment component of the final assessment favoured the student. In particular they queried the inclusion of the part 1 mark, and whilst they accepted that the weighting for Business Policy was reasonable, they argued that the 70%/30% weighting of examination/coursework was too advantageous to the student.

In view of these reservations it is important to examine briefly the case for continual assessment.

The Case for Continual Assessment

A Study of the Examination Method

The alternative to continual assessment is examination. An examination should fulfill four objectives as a method of assessment:

i) It should be valid.
ii) It should be reliable.
iii) It should stimulate a backwash effect on teaching.
iv) It should ensure a comparability of grading standards.

It can be argued, however, that examinations fail to fulfill completely, all of these objectives. The validity of examinations can be questioned on the grounds that the abilities they demand; thinking and writing at speed whilst under pressure, are overemphasized and 'unrealistic'. As far as reliability is concerned, examinations, as a means of assessment can be criticized in that the outcome depends on the candidates' predicting questions, on his/her physical condition and especially on the particular examiner who marks the papers. Examinations also have little "backwash" effect on teaching as students are required to cover such a wide range of topics that they find it impossible to deal with any given subject in depth. Finally, the intrinsic defects of the procedure used make it difficult for an external examiner to function effectively and therefore, comparability of grading standards is not necessarily achieved.

Due to the above weakness of assessment by examination only, continuous assessment is increasingly being used in conjunction with examination as a means of assessing student performance. Continual assessment can be designed to provide information which supplements the examination or which complements it. In the case of the former the reliability of the assessment is increased; in the latter case it is the validity of assessment which is increased.

Continual Assessment at Queen's University

Research carried out at the Department of Education of Queen's University further enhances the case for continual assessment. Here a "mixed" method of assessment has been implemented, 40% of marks being derived from continuous assessment and 60% from the final examination. Comparative analysis has been made of the students' performance in course-work and in final examination. From this it is evident that the mean failure rate over three years based on examination only is 16.4%, in course-work only it is 3.4%. Also, the mean proportion reaching credit level by examination alone is 7.7%; by course-work alone it is 42.3%. It might appear from these results that continuous assessment is a soft option, yet it can be maintained that, in a system which allows course-work to count, real standards rise, since the quality of the work produced in dissertations and essays is higher than that produced in three hour examinations.

CONTINUAL ASSESSMENT AT NEWCASTLE POLYTECHNIC

The Data

At Newcastle Polytechnic the criticism of "soft option" made by the Board of Examiners against the B.A. Business Studies has stimulated research into the operation of the assessment scheme and its effect on degree classifications. The research collated the following data for each student:

i) The student's part 1 mark.
ii) The student's option.
iii) The set of course-work marks as defined by the scheme.
iv) The set of externally agreed part 2 examination marks.
v) The class of degree awarded.

A set of computer programs was written to calculate for each individual student the following set of marks. The final aggregate mark; the subject mark being a weighted average of 70% of the examination mark and 30% of the course-work mark. The final aggregate mark was calculated with the part 1 mark included and then with the part 1 mark excluded. The final aggregate mark was then recalculated but with the subject mark being weighted 75% of the examination mark and 25% of the course-work mark. Again the final aggregate mark was calculated both including and excluding the Part 1 mark. The final aggregate mark was similarly recalculated for weighting schemes of 80%/20%; 85%/15%; 90%/10% and finally for 100%/0% i.e., the aggregate mark calculated from the examination marks only. In all these calculations the business policy mark was maintained as the average of the examination mark and the course-work mark since the Board of Examiners agreed with this.

If the criticisms of the external examiners were true the most advantageous marks to the student would be the mark as calculated under the current scheme, and the most disadvantageous to the student would be the examination marks excluding the Part 1 mark.

The results of the research indicate a number of interesting features. The distribution between classes varies most in distinguishing between upper-second and lower-second classes. Table 1 shows the year 1982 awarding a lower proportion of upper-second 28%; with 1985 awarding 54%. The years 1983/4 being "average" years.

Chansarker and Rautroy found that there was a correlation between continual assessment marks and examination performance and this correlation structure is apparent in the data emanating from Newcastle Polytechnic; but what is also interesting to investigate is the nature of the advantage that the final aggregate mark gives, based on course-work and examinations, over the examination only aggregate mark. Table 2 gives the comparison of the examination only mark with the weighted average mark and suggests that the students with a lower examination aggregate are more advantaged by the inclusion of the course-work component.

Further examination of the relationship between the final aggregate mark and the examination mark shows that there is a negative correlation between the final aggregate mark and the advantage to the student from continual assessment. The advantage to the student from using continual assessment being measured as:

advantage = final aggregate mark - examination only mark

Graphs 4 - 8 plot advantage against final aggregate mark. This supports the conclusions previously drawn from figure 3 that the inclusion of the continual assessment mark advantages the student with a weaker examination profile, more than a student with a stronger examination profile.

The relationships between degree class awarded and continuous assessment is also identified in the results. Figure 9 cross tabulates the class of degree awarded with the aggregate marks including the course-work and Figure 10 cross tabulates the class ot degree awarded with the examination marks only. If the assessment scheme was adhered to rigidly and no examiners judgment was exercised, then all the frequency counts would lie on the leading diagonal. The dispersion from the leading diagonal can be regarded, therefore, as an indicator of the efficiency of the assessment process.

Conclusions

A number of conclusions can be drawn from the results of research at Newcastle Polytechnic. First, there is sufficient evidence to suggest that the course-work advantages the weaker student more than the able student. The original criticism made by the Board of Examiners was probably justified. However, the overall difference between the final aggregate mark and the examination only mark in terms of degree classification were small, the majority of students (169 out of 216) falling clearly into one class band on both systems. It is interesting to note the way in which the lower-second/upper-second profile has changed over the four years. This is for the student a critical decision. Tables 3 and 4 suggest that the Board of Examiners have been moving away from a reliance on the examination profile, Table 3 & 4 1982, to a view based on the overall course-work and examination profile, Table 3 & 4 1985. From the data it seems that a criteria for the award of the honours class based on both the aggregate marks discussed and other factors personal to the student would be consistent with the nature of the scheme.

If the assessment scheme currently used on the B.A. (Hons) Business Studies degree is measured against the four criteria discussed earlier:

i) It should be valid.
ii) It should be reliable.
iii) It should stimulate a backwash effect on teaching.
iv) It should ensure a comparability of grading standards.

The additional information contained in the computer printout (see sample output) should provide additional information about the nature of the students profile to increase both the validity and the reliability of the assessment process. The remaining two factors are outside the scope of this analysis but our experience is similar to the Queen's University observations about the quality of course-work from students. The Board of Examiners is charged with maintaining comparable standards and the Board has expressed satisfaction on this issue.

The research undertaken at Newcastle Polytechnic is specific to the Polytechnic and to the B.A. (Hons) Business Studies degree. From our informal investigations it seems that the assessment scheme at Newcastle is not too dissimilar to those at other Polytechnics and Colleges of Higher Education, we would be pleased to hear from anyone who has a similar data set for similar courses with a view to extending this work to cross course comparisons and cross institutional comparisons.

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THE PREDICTION OF ACADEMIC SUCCESS AND: LIMITS FOR COUNSELING BEGINNING STUDENTS

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Introduction

Failing the final university examination often means a tragedy for the unlucky student. Events like this imply, moreover, a waste of public money. Consequently, it seems to be interesting to predict the chance of a beginning student as well as to evaluate the efficiency of the student counseling institution. That are newer means in order to bridge the gap between high (resp. secondary) school and university.

As already known from the studies of various other researchers, it is most difficult to forecast the future academic achievement of high-school graduates.

The high-school grades have been shown to be the best predictors of academic success, although their objectivity, reliability, and validity are apparently doubtful. Psychological test scores are preferable from theoretical reasons - with respect to the three above-mentioned criteria - but all experience has shown so far that their predictive value is inferior.

VAN DEYNSE (1984) found, for example, 0.37 for the correlation of study results in the first year at the university with high-school grades of engineering students of the Catholic University of Leuwen, Belgium. The investigations of TROST (1975) and other authors have already demonstrated that high-school grades are the best predictors and that their Pearson correlation coefficients amount up to about 0.45 (ULBRICHT 1980).

The predictive value of other variables, e.g. biographical and sociological facts, are left far behind, although being positive. Therefore, the second best predictors could be shown to be tests, especially tests of special knowledge and skills, and psychological tests.

Some researchers preferred not to use the absolute data, which are evaluated in this paper, but rather profiles (ORLIK 1961, WUNDERLICH 1981).

The design of the study

In this paper, the data (predictor variables: high-school grades, test scores, the quantified judgement of the student counseling institution; target variables: grades of the preliminary- and of the main diploma examination) of N=1.043 students of the 1974 and the 1975 class of the University of the Federal Armed Forces, Munich (FUM) are scrutinized.
The description of the sample of this study is given in table 1. As can be seen, there is a larger amount of missing data. Consequently, the calculations were performed using pairwise deletion. The predictor variables have been collected before the young students entered the university.
Two groups of courses of studies are contrasted in this paper, namely engineering sciences (aerospace eng., electrical eng., civil eng., and computer science) on the one hand and arts (economics and pedagogics) on the other hand.
Bearing these facts in mind, the design underlying this study can be summarized in figure 1.
Table 2 explains the variable names, i.e. the abbreviations of the variables, their meaning and range.

The outcomes

In order to evaluate the data, a correlation analysis and a multiple regression analysis have been performed. The outcomes are discussed in this paragraph. Particularities, which are evidently due to only one of the classes, are omitted.

Outcomes of the correlation analysis (tables 3 and 4):
It is obvious to assume that the academic success can be predicted most successfully by using data which were acquired by the student at the same institution. This fact is due as well to the similarity of the standards as to the smaller difference in time. FISCHER & WAGNER (1982) have found considerable correlations of the basic disciplines – e.g. Technical Mechanics r=0.67 – and the final diploma grade at mechanical engineering.
This outcome is confirmed in this study: The correlations of the preliminary diploma grades and the main diploma grades are high,

namely r(1974 class)=0.70 and r(1975 class)=0.77 with respect to the engineering sciences, and r(1974 class)=0.63 and r(1975 class)=0.62 with respect to the arts.
The arithmetic mean of the high-school grades yields the most significant correlations, independent upon the discipline.

Special outcomes for the engineering sciences are:
The high-school grades, which reach at the largest amounts of the correlations with regard to the university grades, are: Mathematics, Physics, Chemistry, German language, and History.
The outcomes of the special tests of knowledge and skills (in mathematics and physics) are comparable, but the psychological tests are left far behind. The best correlations are shown, anyway, by the subtests RA, GE, and ZR of the AMTHAUER IT.

Special outcomes for the arts are:
In the given instance, the high-school grades in History, Geography, Biology, English language, and German language have the most valuable correlations. On the other hand, only the subtest IT-GE is of interest, while the other psychological tests show a dependency upon the particular class.

With regard to the student counseling can be stated:
It proves a significant correlation only with respect to the preliminary diploma grade, when speaking of engineering students. But the correlations are significantly more favorable in the case of the arts students, where r(SEMPF, DN-VD/1974) = 0.29 and r(SEMPF, DN-HD/1974) = 0.35 have been calculated.

Outcomes of the multiple regression analysis (tables 5 and 6):
The objective was to find out multiple regression equations with up to nine predictor variables. The multiple correlation coefficients that are reported in table 5 and 6 are significant at the 5%-level, as has been shown by an F-test. Additionally, every variable which has entered a regression equation has been submitted to a particular F-test.
As can be easily seen from table 5, mathematical knowledge is crucial when it comes to entering a course of studies in the field of engineering: The high-school grades in Mathematics, the K-MAT knowledge test, but also the general education in natural and engineering science are significant predictors.

The other variables, which have entered the regression equation – e.g. psychological tests – do not contribute to the prediction in a way which was worth mentioning.
Nevertheless, these variables are of the largest predictive importance (e.g. IT-GE, IT-ME, IT-RA) in the case of the arts. It is only the judgement of the student counseling institution (SEMPF), which is rivaling with those variables. SEMPF even appeared to be the only significant predictor in the case of the arts students of the 1974 class (DN-HD: beta = 0.29, F = 4.63s).

Appended note:
The other coworkers of the project "The prediction of the academic success" have been: K. Esters-Mundhenk, H. Völkl, A. Winteler, O. Wunderlich. I would like to thank O. Wunderlich Dipl.-Psych. for assistance at the central computer of the FUM.

Table 1: The sample

courses of studies	class 1974	1975
engineering sciences 1)	170/251	143/381
arts 2)	120/186	67/232
sum	313/442	210/614

The difference between the largest and the smallest numbers are due to missing data.

1) Aerospace engineering, Civil engineering, Computer science, and Electrical engineering

2) Economics and Pedagogics

Table 2: List of variables

variable name	meaning	range (worst - best score)
	I. target variables:	each: 5.0 - 1.0
DN-VD	(resp. DN-HD) = arithmetic mean of the preliminary (resp. main) diploma examination	
	II. predictor variables,	
	II.1 high school grades:	each: 5 - 1
	MATHE=Mathematics, PHYSI=Physics, GESCH=History, ERDKU=Geography, BIOLO=Biology, CHEMI=Chemics, DEUTS=German language, ENGLI=English language.	
	DNABI=arithmetic mean of all High school grades :	4.2 - 1.0
	II.2 Tests of special knowledge and skills	
K-MAT	(resp. K-PHY)=test of knowledge in mathematics (resp. in physics)	each: 6 - 1
	II.3 Psychological tests	
	The 9 subtests of the AMTHAUER Intelligence-Structure-Test (IT 70)	each: 075 - 140
	IT-SE=completion of sentences, IT-WA=choice of expressions, IT-AN=analogies , IT-GE=commonesses, IT-ME=memory problems, IT-RA=arithmetic problems, IT-ZR=extension of sequences of numbers, IT-FA=choice of figures, IT-WÜ=dice problems.	
	RAM--=RAVEN-Progressive-Matrices-Test (without a standard score)	00 - 36
	KLTSW=test of concentration and proficiency	075 - 140
	WT-SW=test of knowledge with 2 subtests, namely WT-NT (field of science and technology) and WT-LM (field of literature, fine arts and music)	each:075 - 140
	II.4 students´ counseling	
	SEMPF=award of the students´ counseling institution (on the basis of all available data)	3 - 1
	(0= well prepared, 1= qualified only upon a time of probation, 2= limited qualification, 3= qualification is not sufficient with respect to a particular course of studies)	

Figure 1: The design of the study "prediction of the academic success"

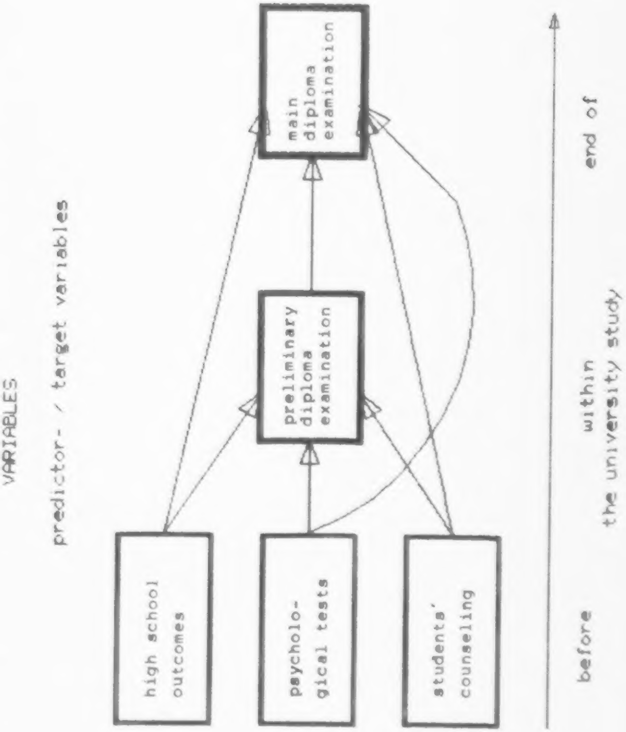
VARIABLES
predictor- / target variables
high school outcomes
psycholo-gical tests
students' counseling
preliminary diploma examination
main diploma examination
before
within the university study
end of

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Table 3: Pearson Correlation Matrix, 1975 class
High-school outcomes (x 100)

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	**MATHE**	-	60s	32s	21s	30s	41s	19s	33s	58s	40s	30s	51s	44s
2	**PHYSI**	47s	-	37s	29s	38s	41s	22s	27s	63s	28s	37s	42s	32s
3	**GESCH**	20s	19s	-	49s	39s	27s	38s	17s	64s	15s	16s	20s	24s
4	**ERDKU**	21s	28s	52s	-	33s	28s	33s	19s	57s	13	27s	21s	14s
5	**BIOLO**	30s	43s	34s	39s	-	51s	27s	24s	62s	10	32s	32s	23s
6	**CHEMI**	39s	43s	30s	32s	51s	-	22s	32s	62s	15s	33s	30s	21s
7	**DEUTS**	14s	27s	40s	28s	30s	25s	-	32s	57s	22s	27s	20s	19s
8	**ENGLI**	07	16s	17s	18s	15s	17s	30s	-	53s	19s	29s	18s	23s
9	**DNABI**	50s	55s	62s	61s	62s	61s	58s	46s	-	31s	41s	45s	35s
10	**K-MAT**	26s	07	07	20	20s	21s	03	$\underline{08}$	15	-	44s	41s	28s
11	**K-PHY**	12	$\underline{02}$	03	07	$\underline{04}$	$\underline{00}$	13	$\underline{10}$	11	32s	-	44s	32s
12	**DN-VD**	09	19s	18s	18s	20s	14s	19s	14s	30s	05	$\underline{10}$	-	77s
13	**DN-HD**	08	14	21s	20s	24s	$\underline{01}$	12	20s	25s	$\underline{03}$	01	62s	-

above: engineering sciences; below: Arts
s=significance level $p < 0.05$.
Underscores indicate negative sign.

Table 4: Pearson Correlation Matrix, Class 1975
Psychological tests (x 100)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	IT-SE	-	$\underline{02}$	20s	13s	02	13s	17s	21s	12	13s	$\underline{02}$	06	15s	16s	09	$\underline{01}$	02
2	IT-WA	18s	-	14s	05	19s	22s	15s	14s	14s	16s	06	$\underline{28}$s	29s	28s	17s	$\underline{16}$s	$\underline{09}$
3	IT-AN	13	01	-	26s	03	32s	25s	24s	21s	19s	01	$\underline{19}$s	23s	25s	19s	$\underline{16}$s	$\underline{11}$s
4	IT-GE	19s	10	21s	-	08	22s	13s	28s	14s	24s	$\underline{10}$	$\underline{25}$s	20s	21s	18s	$\underline{12}$	$\underline{20}$s
5	IT-ME	01	$\underline{02}$	04	07	-	20s	24s	17s	16s	30s	22s	$\underline{28}$s	08	$\underline{01}$	15s	$\underline{10}$	$\underline{11}$
6	IT-RA	06	10	16	11	21s	-	45s	29s	38s	38s	38s	$\underline{48}$s	18s	14s	12	$\underline{24}$s	$\underline{24}$s
7	IT-ZR	03	12	06	11	28s	35s	-	34s	34s	34s	30s	$\underline{33}$s	11	09	06	$\underline{12}$	$\underline{19}$s
8	IT-FA	04	15	22s	28s	17s	21s	22s	-	41s	31s	03	$\underline{36}$s	20s	34s	17s	$\underline{12}$	$\underline{08}$
9	IT-WÜ	13	10	08	23s	16	36s	29s	37s	-	30s	18s	$\underline{36}$s	13s	15s	14s	$\underline{20}$s	$\underline{12}$
10	RAM--	20s	10	14	24s	24s	38s	41s	25s	45s	-	15	$\underline{34}$s	19s	23s	21s	$\underline{18}$	$\underline{14}$
11	KLTSW	$\underline{07}$	$\underline{02}$	$\underline{02}$	$\underline{08}$	27s	48s	42s	$\underline{15}$	18s	31s	-	$\underline{23}$s	$\underline{02}$	$\underline{06}$	01	01	$\underline{04}$
12	SEMPF	$\underline{20}$	$\underline{22}$s	$\underline{18}$	$\underline{36}$s	$\underline{30}$s	$\underline{58}$s	$\underline{44}$s	$\underline{32}$s	$\underline{41}$s	$\underline{50}$s	$\underline{30}$s	-	$\underline{32}$s	$\underline{41}$s	$\underline{24}$s	30s	13
13	WT-SW	02	02	11	09	13	22s	07	17s	21s	22s	19	18	-	74s	84s	$\underline{22}$s	$\underline{12}$
14	WT-NT	06	02	26s	16	$\underline{04}$	23s	06	31s	20s	27s	07	$\underline{30}$s	66s	-	48s	$\underline{21}$s	$\underline{01}$
15	WT-LM	$\underline{01}$	03	02	03	19s	13	00	$\underline{03}$	09	17	09	$\underline{04}$	73s	27s	-	$\underline{15}$s	$\underline{13}$
16	DN-VD	$\underline{09}$	$\underline{05}$	04	$\underline{15}$	09	$\underline{05}$	07	05	$\underline{01}$	$\underline{05}$	$\underline{07}$	23s	$\underline{10}$	$\underline{01}$	$\underline{22}$s	-	77s
17	DN-HD	10	$\underline{20}$s	07	$\underline{24}$s	$\underline{06}$	13	05	$\underline{03}$	02	$\underline{06}$	$\underline{08}$	$\underline{02}$	$\underline{12}$	11	$\underline{18}$	62s	-

above: engineering sciences; below: Arts
s = significance level $p < 0.05$. Underscores indicate negative sign.

Table 5: Multiple regression analysis
1975 class, engineering sciences

DN-VD; multiple R = 0.64s

predictor	beta	F
MATHE	.34	14.4s
K-PHY	.28	8.5s
K-MAT	.19	4.3s
BIOLO	.17	3.7
WT-NT	.17	1.9
IT-WÜ	-.11	1.7
IT-RA	.08	0.8
WT-SW	-.10	0.7
ENGLI	-.07	0.7

DN-HD; multiple R = 0.58s

predictor	beta	F
MATHE	.33	13.2s
K-PHY	.32	9.2s
WT-NT	.39	8.0s
IT-GE	-.15	3.0
WT-SW	-.18	2.2
IT-ZR	-.11	1.6
IT-SE	.10	1.3
BIOLO	.10	1.0
SEMPF	-.09	0.6

s = significance level $p < 0.05$

Table 6: Multiple regression analysis
1975 class, arts

DN-VD; multiple R = 0.54s

predictor	beta	F
SEMPF	.57	10.3s
IT-ME	.29	4.3s
WT-LM	-.27	3.9
K-PHY	-.26	3.4
IT-ZR	.22	2.2
DEUTS	.17	1.7
WT-NT	.15	1.1
KLTSW	-.14	0.9
K-MAT	-.11	0.6

DN-HD; multiple R = 0.49s

predictor	beta	F
IT-GE	-.35	5.4s
GESCH	.33	4.1s
CHEMI	-.34	3.9s
IT-SE	.30	3.5
BIOLO	.23	1.8

s = significance level $p < 0.05$

COMPARISON OF THE STUDENTS LEARNING EVALUATION AND RELATED SUBJECTS BETWEEN FACULTIES

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Introduction

The vice-president of teaching and research at l'Université de Moncton presented a report on the evaluation of the students by each faculty. This report did not compare faculties but data (means and ratio of failures) suggested that there were significant differences among faculties in regard to the learning evaluation.

Problems

Following this report, the following questions were posed:

1. Are the results of the learning evaluation significantly different from one faculty to another?
2. If differences are observed in one university, do these differences exist in other universities?
3. If differences are observed, is it possible to find other factors that would be related to them?

Review Of The Litterature

Before doing anything else, a computer search was run in the ERIC system. The following descriptors were used: 1-scores or scoring, 2-differences, 3- departments or faculty, 4- university. The descriptors were combined together. When descriptors 1, 2 and 3 or 1, 2, 3 and 4 were combined together, no data were reported in spite of the fact that 3740 papers were reported under descriptor 1, 25616 under descriptor 2 and 15570 under descriptor 3.

This means that no paper can be found in the ERIC indexes concerning the comparison of the student learning evaluation between universit, faculties or departments.

RESEARCH OBJECTIVES

The following objectives were stated:

1. To verify if significant differences can be observed between faculties in the students means or in the proportion of failures and of course withdrawals.
2. If differences are found between faculties in one university, to check if such differences were observed in other universities, and
3. If significant differences are found in the learning evaluation outcomes between faculties, to check if there are other differences in related areas that can be factors related to them.

The Research Plan

To investigate each of these objectives it was decided to check them in a chronological order. The analysis and the results are then presented in the same order.

First Objective

Sample

To check the first objective, the results of the 1982-1983 students that were still registered at the university in september 1983 were used. The data are the final grades of the first, second and third years students for every course followed. The results of the fourth year students were not used because the grades of these students are taken out of the computer after graduation. A total of 36,313 individual grades were used for the analysis.

Results Analysis

First, a mean was computed for all the courses given in a faculty and a variance analysis was run between the means. This data is presented in table 1. An asterisk show a significant difference between two faculties at the .05 level.

The reading of table 1 shows that real differences are observed in the learning evaluation outcomes between faculties. The mean of faculty D is significantly higher than all others and the mean of faculty C is significantly lower than all others.

Others analyses were made to check if a student enrolled in faculty D would receive grades as high as those he receives in his own faculty when he follows courses in another faculty. The differences observed between means given to faculty D students were in the same order as the ones presented in table 1 and differed in the same way.

Table 1

Matrix of the Observed Differences Between Faculties Means

Means	Faculties	C	A	B	H	G	F	E	D
2.32	C								
2.42	A	*							
2.51	B	*	*						
2.62	H	*	*	*					
2.67	G	*	*	*					
2.72	F	*	*	*					
2.87	E	*	*	*	*	*			
3.07	D	*	*	*	*	*	*	*	

N.B. The treatment of the data on the computer was done by Johanne Vachon-Babineau.

(a) In order to remain anonymous, letters were used to identify faculties.

To complete the check of the first objective, the failures and the courses dropped out were computed for each faculty. In order to check if the difference in the ratio were significant a chi square was computed. The obtained chi square between the failures ratio was 294.83 and between courses dropped out ratio was 192.54. These K^2 were significant at the level of .001 with a freedom of 9 degrees. The significant differences between the ratio of failures to the ratio of drop outs confirm the data presented in table 1.

Concerning the first objective, the data presented show that the results of the learning evaluation differ significantly from one faculty to the other in the same university.

Second Objective

Is l'Université de Moncton a unique case or is the same situation observed in other universities? To answer this question, a letter was sent to the dean of six faculties D (3 francophone and 3 anglophone universities) in Canada. The same situation was observed elsewhere. Only one dean provided an explanation to the high grades of his students: to be allowed to follow a program in this faculty D, the student must have a bachelor degree from another faculty with a grade average of B or higher.

Third Objective

Research Method

To check if the observed differences could be explained, three means were used:

1. The deans of all the faculties were interviewed.
2. A survey was run among the professors, and
3. Some students were invited to answer a questionnaire.

Deans Interview

Specifically the interviews with the deans were intended to check if there might exist other differences between faculties and if so in what area. These interview were set up as a kind of pilot study. Definitive results were not expected from them but rather some clues for the elaboration of the other two questionnaires. The deans were questioned on the course syllabi and on the process of evaluation.

Interviewers

The interviewers were graduate students. They were prepared to ask structured questions. They were asked to write the answers given. The questionnaire has been validated by professors.

Results

The interview concentrated on two subjects: the syllabus and the evaluation of the student learning.

Concerning the syllabus, it seemed that differences could be observed in the obligation to give a copy of the syllabus to the students, in the content of the syllabus and in the faculties requirments for the syllabus. With regards to the syllabus content, it was observed that in some faculties the objectives, the method of teaching, the work and reading assignment, the handbook, the bibliography, the form of evaluation and the proportion of the final grade between tests and term papers were not presented.

Concerning the evaluation of learning outcomes, differences could be observed in the minimum faculty requirements, in the type of evaluation used (essay or objective tests), in the proportion of the results of term papers, of laboratory, of examination and of student participation in the final grade average, in the possibility of rewriting a supplemental examination or term paper when students failed, in the form of evaluation used (normative or criterion reference) and in the possibility of using the evaluation system to eliminate students.

Professors Inquiry

Questionnaire

A questionnaire intented to check what form of evaluation (normative or criterion reference) the professor used, if the professor use allowed a student to rewrite a supplemental examination or term paper and the professor's opinion concerning the correctness (too high, just correct or too low) of the evaluation results in his faculty, was sent to all the professors. The questionnaire also asked about the form of evaluation and the possibility of rewriting a test or a paper, and in how many courses it was done. The results to these questions were not used because some professors did not answer the question or answered "All". The questionnaire was validated.

Sample

The questionnaire was sent to all the professors. Out of the 294 questionnaires sent, 173 were returned . See table 2.

A chi-square test for goodness of fit was run on the matrix of talbe 7. The K^2 was 3.0255 and was not significant.(p = .8826).

Table 2

Distribution of the Answers by Faculties

	Faculties									
	A	B	C	D	E	F	G	H	Not identified	Total
Returned	16	42	37	31	8	5	24	7	3	173
Sent	29	73	61	57	8	10	45	11		294

K2were computed between each form of evaluation and the total of respondants. None were significant.

The numbers of professors who allowed rewriting of both examinations and term papers, of examinations only or of term papers only were computed and k^2 were computed. There was a significant chi-square between faculties who allow the rewriting of both tests and term papers (chi-square of 15.0294 with a p = .0356) and between faculties who allow rewriting of term papers only (chi-square of 19.2423 with a p =.0075).

The professors were also asked if in their faculties, the final marks given to the students were too high, exactly right or too low. These results are presented in table 3.

Once again, a chi-square was computed on these results. The K^2 was 31.1241 with a p.0053.

Table 3

Exactness of the Evaluation

	Faculties								
	A	B	C	D	E	F	G	H	Total
Too high	8	8	2	11	0	0	7	1	37
Exactly right	6	22	14	14	7	4	14	6	87
Too low	0	0	3	0	0	0	0	0	3

The inquiry revealed that there are significant differences between the faculties who allow students who do not have good grades to rewrite both examinations and term papers or term papers only and faculties who do not. So on this subject there eas not a common policy among faculties. The inquiry also revealed that the majority of the professors from each faculty think that students on their own are evaluated exactly right but the proportion of the professors who think like that differed from one faculty to the other.

Student's Questionnaire

Subjects

To complete the comparison between faculties it was decided to question the students about factors related to the learning evaluation. It seemed that the best way to obtain valuable information on the subject was to ask students to compare faculties together. In order to have a better judgement it was decided that to assess a faculty the student must have taken at least five courses in this faculty and because he had to compare faculties, he must have taken courses in two different faculties (at least five in each). This procedure reduced considerably the population of subjects and because the sample was chosen on a voluntary base, the number of subjects was quite low. The numbers of students who were, for A and B, 11 , for A and C, 13, for A and D, 5, for A and G 9 and for A and H, 9, for B and C, 15, for B and D, 34, for B and G, 4 for B and H, 4, for C and D, 19, for C and E 7 and for C and G, 6. There wasno data available for faculty F because it was evaluated by only two students.

Questionnaire

The questionnaires were made of 34 statements like the following: "In this faculty, it is possible to rewrite a supplemental examination when the results at the first one is too low". Each statement was followed by the same set of answers. This comprised six columns and and 8 rows. In the first column were the faculty names, and other columns were formed of bracket with the following titles respectively:

Always, Often, Sometimes, Never and Does not apply. The questionnaire was built after consultation with students who had a bachelor's degree in one area prior to registering in the school of education. The questionnaire was submitted to a panel of professors who agreed that the questionnaire was suited for the purpose.

Analysis

Because the students did not use necessarily the same scale to evaluate the faculties the scores given were transformed into z scores using the mean and standard deviation of the scores on each question that they originally gave for this pair of faculties.

When every score was transformed into z scores, a one way analysis of variance was computed for each question to check if there were differences between faculties. In order to verify if there was a relationship between each statement and the learning evaluation, a correlation coefficient was computed, the first variable was the learning evaluation mean of each faculty and the second, the mean of z scores given by the students on each statement for each faculty.

Results

The subject of each statement is presented. It is followed by the correlation coefficient obtained between the statement and the learning evaluation. Then the word "Difference" is writen when there were significant difference between faculties on this specific statement.

1. Rewriting a supplemental examination ($r = .03$) Difference.
2. Rewriting a weak term paper ($r = .87$) Difference.
3. Students have premuisite for a course ($r = .00$) Difference.
4. Courses are more dependant on reasoning than on memory ($r = .15$) Difference.

5. New material at each course. (r = -.46) Difference.

6. A lot of personnal work is necessary. (r = -.41) Difference.

7. Courses are easy. (r = .63) Difference.

8. A last minute effort is enough to succeed (r = .50) Difference.

9. Evaluation is mostly based on tests (r = -.54) Difference.

10. Evaluation is mostly based on term papers (r = .64)Difference.

11. Evaluation is related to the objectives of the course (r =.79) Difference.

12. Examinations test content that was not seen in class. (r = -.60) Difference.

13. Student self evaluation is a part of the final grade. (r = .84) Difference.

14. The course attendance is a part of the final grade. (r =.52) Difference.

15. Mainly objective tests are used. (r = .66) Difference.

16. Mainly essay tests are used. (r = -.61) Difference.

17. An immediate feedback is given after evaluation. (r =.85) Difference.

18. Possibility of choosing among questions of a test. (r =.51 Difference.

19. A lot of reading and personal work are necessary (r =.18) Difference.

20. Students are given a course syllabus. (r = .79) Difference.

21. The syllabus states the course objectives. (r = .79) Difference.

22. The syllabus states the content of the course. (r = .75) Difference.

23. The syllabus states the kind of evaluation. (r - .94) Difference.

24. The syllabus states the schedule of tests and term papers.(r=.82)

Difference.

25. A bibliography appears on the syllabus. (r = .76) Difference.

26. Term papers requirements are stated on the syllabus. (r = .87) Difference.

27. Students are treated equally. (r = .69) Difference.

28. Students from other faculties are treated as well as those of the faculty. (r = .76) Difference.

29. An understandable French is used. (r = .67) Difference.

30. Professors help students who need it. (r = .85) Difference.

31. A fixed schedule for individual meeting with professors is known. (r = .73) Difference.

32. Professors are presented at their office at time scheduled for individual meeting. (r = .74) Difference.

33. Possibility to join a professor out of the scheduled time for individual meeting.(r = .57) *No difference.*

34. Professors help students who need it. (r = .80)Difference.

Conclusion

This paper has demonstrated that differences in learning evaluation outcomes cannot be isolated. Thez are linked to other factors. Possibly a way to reduce the difference in learning evaluation between faculties and to improve learning woult be to improve other areas linked to evaluation such as the specification of objectives and the use of mastery learning (linked to the possibility of rewriting a tets or a term paper) and to give more information to the student on the syllabus.

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Enhancing student motivation and performance through attribution retraining

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This paper reports on an experimental program aimed at alleviating freshmen's motivation after failure at mid-term examinations. This program is based on recent cognitive approaches to human motivation, pointing to the importance of causal attributions -- in other words, the causes people ascribe to events such as examination results. Training programs designed to enhance individuals' motivation by altering unfavourable ascriptions are therefore called attribution retraining programs (for reviews see Heckhausen & Krug, 1982 and Försterling, in press). The present research is based on an attributional model of motivation developed in the last 15 years by Bernard Weiner and his associates (Weiner, 1979).

Weiner contends that people look spontaneously for explanations of unexpected or negative events (Weiner, 1985). Thus, for instance, a student failing at an exam is strongly concerned with questions such as "Why did this happen ?" and "What can I do to pass ?" (Wong & Weiner, 1981, p.652). Causal ascriptions are inferred from subjective perceptions and interpretations. Weiner's research, however, has documented that there are a number of systematic and general relationships between attributions for achievement events and anticipations for similar tasks in the future. These expectations, in turn, have a considerable impact on people's motivation and performance.

Attributional research has furthermore documented that some kind of attributions have positive influences on expectations and motivation, whereas other categories of causal ascriptions have negative consequences. For example, students' expectations and motivation are less likely to fall if a given failure is ascribed to causes that can be modified in the short time (personally controllable and unstable), such as lack of effort or inefficient study methods. Conversely, anticipations and motivation are more negatively affected if failure is attributed to stable or uncontrollable elements, such as lack of ability or bad teaching (Weiner, 1979; Abramson, Seligman & Taesdale, 1978; Anderson & Arnoult, 1985). Thus, causal beliefs with respect to achievement events have positive as well as negative consequences on expectations, motivation and performance. Attribution retraining programs focus on a limited category of favorable attributions in order to alter motivation and performance in a positive direction.

Attribution retraining programs.

Several training programs based on these principles have recently been developed in order to alleviate low expectations and motivation on the part of failed pupils and students.

Training programs for children at primary or secondary school follow a very similar procedure. In a typical experiment, pupils with learning difficulties and unfavourable attributions are selected for a training program. For example, children with reading or math problems who make little reference to effort in explaining failure. The treatment usually lasts one hour a day, and is repeated for several days. Pupils are given school tasks of varying difficulty so that they will experience failure as well as success. If the child is not able to solve the task correctly, the trainer typically comments : "You are wrong, you have not tried enough". If the task is correctly solved, the trainer says : "You are right, that's because you have tried hard". Control subjects receive similar tasks, but are only told that they are right or wrong.

In nine experimental programs it has been shown that children who followed an attribution treatment persist longer and perform better at similar tasks after the training than control subjects. This improvement is due to their increased use of effort attributions in explaining failures and success. In two studies, however, this improvement in performance was not found (see Försterling, in press).

In higher education, there have been fewer attempts to change students' motivation with attributional techniques. The present training is largely inspired by Anderson's (1983) experiment. The task in this experiment was to persuade fellow students by phone to give blood for the Red Cross. After providing introductory explanations on the goal and importance of this task, attributions were experimentally manipulated. In one experimental condition, it was explained to the students that persuasion of others required appropriate "abilities and personal styles". In another condition, students were told that persuasion depended on "the particular strategies or tactics that are used" (p.1140). The students made a practice call together with the trainer, and received a two-page summary of information needed for blood bank canvassers before they started making telephone calls. The experiment shows that students assigned to the "strategy" condition anticipated better results, did make more telephone calls and obtained more positive answers than students of the "ability" condition. This effect was particularly marked in students who usually ascribe their failures to character or ability-like causes.

Method

80 students taking an introductory physics course were selected for this experiment. The selection criteria were twofold. First, selected students had scored below 50 % on their most recent physics exam. Second, they reported that their study methods were not efficient or only moderately so. Half of the selected students were recruited for a training program, the other half served as control group.

Training sessions were conducted with one to three (usually two) students. In the first session of the training program, the trainer explained to the students that study methods are important causes of success and failure at university. To convince the students, he made use of some authentic statistical material. Next, the trainer looked, together with the students,at what could be done to improve their personal study methods. During this talk, the trainer provided the students with a list of practical study strategies. After a period of two weeks, in which students had the opportunity to practise with some of the new methods at home, an informal and individual test was held at the second session in order to provide feedback about students' improvements.

The whole of the training lasted one month. Subsequent examinations were scheduled a few days after the last training session, and three months later. To ascertain whether the training had induced more favorable causal beliefs, a questionnaire was administred to all subjects after they had received the scores from the first examination after the training. Students were asked to indicate to what extent 10 possible causes had influenced their examination results, on a response format ranging from strongly negative (=1) to strongly positive (=9). The causes listed were : difficulty, intelligence, effort, desire to do well, study methods, luck, teaching, foreknowledge, help from others, and interest.

Results

Although participation was not a requirement for the course, many students showed interest in the training program. Only 8 of the invited students did not show up for the first session, which reduced the number of experimental subjects to 32. Unfortunately, only 15 students attended to the first session only, and of the remaining 17 subjects who attended both sessions, only 9 did their home assignments. It was clear that arrangments for the second session were not kept to because they were scheduled too close to the second examination.

Performances .

Table 1 shows the scores from the examinations immediately after the training and three months later. The experimental subjects show some degree of higher performance than the control group. The average increase is +0.85 in the control group and +0.97 in the experimental group. A covariance analysis on the scores from the examination immediately after the training (with the scores before the training as covariate) indicates that this difference is negligible, *F*(1,69) = .285, ns.

Table 1 : Examination results before and after the training.

	control	experimental			
		1 sess.	2 sessions		total
			a	b	
Before	5.85	5.93	6.63	6.78	6.34
Immediately after	6.70	5.87	7.25	9.78	7.31
Difference	+0.85	-0.06	+0.62	+3.00	+0.79
Three Months later	5.63	6.33	5.37	6.66	6.19
Difference	-0.22	+0.40	-1.25	-0.12	-0.15

Note : Maximum score = 20. (a) did not (b) did homework.

In Table 1, the experimental group is further divided into three groups according to the number of sessions attended and whether participants did their home assignment or not. These separate data indicate that students who did their homework performed better on the examination immediately after the training. Their scores increase by +3.00. Covariance analysis shows that this improvement is statistically significant with respect to control subjects, F(1,69) = 4.476, p <.05. The other experimental subjects show low and insignificant changes.

Table 1 also shows the results from the examinations three months after the training. The slight improvement of the participants who did their home assignment, has disappeared. Covariance analysis indicates no significant differences between this experimental group and the control subjects, F(1,69) =.402, ns. Neither are there differences with respect to the whole experimental group, F(1,69) = .313, ns.

Attributions.

Had the training induced favourable attributions with the experimental subjects ? Results show that participants who did enhance their scores at the examination immediately after the training also show an increase in their causal appraisal. They report more than control subjects that effort, p <.05, and desire to succeed, p <.05, but especially study methods, p <.001, and help from others, p <.001, have caused their increased performance. However, no significant increases in expectations are found.

Discussion

The aim of this experiment was to improve low results and motivation of freshmen at university by explaining failure at examinations to lack of efficient study methods. Only a limited group of participants (28 %) practised new strategies and received feedback about them. They were the only participants who did improve their performances after the training. This small gain was lost three months later.

It appears that the improvement of these subjects is stimulated by more efficient study methods and extra support by the trainer. To a lesser extent, additional effort and stronger desire to succeed are reported as causes of the better results. The present data therefore support, in part, the theoretical principles of this training program, namely that an increase of controllable and unstable attributions does enhance performance at achievement tasks. There was, however, no support for the assumption that expectations mediate between causal beliefs and performance, since they showed no significant changes. Hence, it is very likely that practising new strategies, and receiving feedback about improvements affects performance directly regardless of expectations. This also explains why after three months, during which guidance is not provided, the induced attributions themselves are not strong enough to influence performance in the long run.

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TEACHER EDUCATION

FRIDAY, 18 JULY

1400 - 1530

TEACHER EDUCATION CENTERS: A STATE MODEL FOR IMPROVING UNIVERSITY AND PUBLIC SCHOOL TEACHING

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It is widely recognized that essential ingredients for achieving excellence in public school education are 1) improving the quality of teacher preparation programs (preservice) and 2) improving the quality of programs for public school teachers already in the field (inservice). In regard to teacher preparation or preservice programs, critics have long eschewed the "ivory tower" college professor who hasn't been inside a public school in 20 years, yet is charged with the responsibility of instructing students in how to teach in today's schools. The university teacher who shows up the first day of class and promises to return on the last day of class is not a viable model for teachers of the 80's. The professor who teaches a well-worn theory to preservice teachers may not have much to offer to teachers already working in the field. If college or university professors are remote from the everyday public school experience, inservice teachers will frequently find little use for his or her theories. These in-field teachers are frequently not open to one who has not "been there" even though the professor's theories may have merit.

The university professor learns from interacting with those in direct daily contact with public school pupils. How better to learn the frustrations, joys, and challenges of day-to-day classroom instruction in the 1980's? How better to test one's theories of instructions? When a university or college professor directly works with public school teaching and administrative personnel, he or she has a broad range of first-hand experiences to take back to his or her preservice students in the university classroom.

In regard to teacher training programs for teachers presently in the field, inservice education for public school teachers in Florida has in the past tended to be sporadic depending upon the level of support of teachers, principals, and superintendents in each county; the financial resources of each county; and the location of universities and colleges within the state. The need for quality inservice programs has long been recognized but until recently little has been done in terms of a coordinated state-wide effort.

The Florida legislature has long recognized that the quality of education received by public school students in this state correlates directly with college professors who understand both theory and practice, and with well-educated, updated and informed in-field teachers. In 1973 Florida legislators directly attacked the problem of building bridges between public school personnel and university professors by establishing Teacher Education Centers at universities in the State. The program began in 1974 with 10 centers of which 3 were multi-district centers, and by 1980 all school districts were part of a teacher education center.

The purpose of the Teacher Education Center Act of 1973 section 231.600-231.610 Florida Statues, as amended by the 1974 legislature, was to unite districts, universities, community colleges and the teaching profession. The Act encourages consortium-centered teacher education programs planned, implemented, and evaluated by classroom teachers, school districts, institutions of higher learning and community representatives. Specific objectives of teacher education centers are 1) to strengthen present college and university teacher education programs; 2) to strengthen present school district in-service teacher education programs; and 3) to provide time and opportunity for preservice and inservice teachers to interact with faculty and staff of the colleges and universities and school districts in their common search for the most beneficial educational experiences for students.

The appropriation for teacher education centers for the 1985-86 academic year is $22,000,000. Each county's entitlement to funds is based upon the number of pupils in the system. The county staff awards their district's allocation to as many universities within the state as can meet their identified needs. Each system develops service agreements with universities and submits plans to the state department of education for approval. Community college personnel are utilized as coordinated through individual universities. Payment for services is made to universities by the Department of Education.

To illustrate the implementation of Florida's Teacher Education Act, this paper will focus upon a specific County plan, one with which the authors have considerable, first-hand experience.

In Alachua County, Florida, a Council known as CREATE, Collaborative Resources for Educational Alternatives for Teacher Education, was established to give direction and set priorities through Master Plan components for CREATE clinical preservice and inservice education programs based upon needs assessment studies and evaluation of previous activities. Teachers in the Alachua County system are encouraged to write components for inclusion in the Master Inservice Plan. The Director, Contact People, and Council Members are available to help plan, implement, and evaluate components.

The Council consists of 19 members: ten teachers (4 elementary, 3 middle, 3 high school), a county staff representative, two principal representatives, a Santa Fe Community College representative, community representatives and university teachers. These representatives were selected by the various groups participating in the Teacher Center and recommended to the Superintendent for approval by the School Board of Alachua County. The Council unites district, university, community college and the teaching profession, and facilitates the planning, implementation and evaluation of inservice teacher education programs, recommends to the superintendent policy and procedures for the Teacher

Center, and develops goals and objectives for the Center within the policies as determined by the school board. The Council screens requests for CREATE resources in terms of program priorities.

A program overview of the CREATE Teacher Center includes but is not limited to: 1) assessment of inservice training needs, 2) development of programs based on those identified inservice needs, 3) provision of human and material resources for inservice training, 4) assessment of clinical preservice teacher training, 5) provision of support and assistance to beginning educational personnel and to personnel who are returning to the teaching profession, 6) provision of inservice training opportunities, and 7) facilitation of internal and external evaluation of inservice training in the Alachua County School System.

The CREATE Council meets on a regular basis to review the master inservice plan, review specific resource requests, propose budget expenditures and evaluate the success of the program. CREATE Center staff compiles inservice needs assessment information to use as a basis for planning for the involvement of University of Florida, College of Education faculty in non-college credit activities with the CREATE teacher center. This staff meets with appropriate College of Education personnel to facilitate the matching of inservice needs with the Colleges resource personnel. The professional development training programs conducted by the College of Education faculty who receive release time to work with CREATE are coordinated through the Teacher Center staff at the University of Florida.

Each school in Alachua County has a CREATE Council person elected by the faculty who serves as the communication link between the CREATE county center and each school. The College of Education, University of Florida CREATE Council members, serve as CREATE contact persons for the University.

Each year the Alachua County CREATE Teacher Education Center Council conducts a review of the teacher training program sponsored by the CREATE Center. The purpose of the review is to identify both the strengths and weaknesses of the overall program as perceived by those directly participating in the program and to make recommendations to the CREATE Director regarding changes for the coming year. For the 1984-85 school year, feedback was sought from teachers and other school personnel through two separate data collection efforts. First a 13 statement questionnaire was distributed to all teachers in the district, and second, interviews were conducted by CREATE Council members with principals, school CREATE contact persons, curriculum resource teachers and classroom teachers. The interviews were conducted in all schools in the county. The results of both of these data collection efforts are presented below.

QUESTIONNAIRE RESULTS

Questionnaires were distributed to all 1,400 teachers in Alachua County during the third week in January, 1985. By the second week in February, 686 or 49.2% of the teachers had responded and returned the questionnaire to the CREATE office. Among the respondents, 59.9% taught at the elementary level, 20.9% taught middle school, 13.6% taught at the high school level and 5.6% indicated that they taught at some other level such as adult education. The majority of the teachers (46.8%) indicated that they had at least 10 years of teaching experience, 36.5% had taught between 4 and 10 years, and 16.2% of the respondents had taught for less than 4 years. Only 15.8% of the respondents indicated that they had not participated in any of the workshops, while 42.8% had participated in 1 or 2 workshops; 32.6% had participated in 3 to 5 workshops and 8.4% had participated in more than 5 workshops.

The 13 statements to which the teachers were asked to respond are presented in Table 1. The numerical values in the body of the table indicates the percent of the respondents choosing each of 5 options per item.

TABLE 1

	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE	DOES NOT APPLY OR NO OPINION
1. Overall, the quality of workshops provided this year in your school has been good.	22.0	56.6	4.1	1.2	16.2
2. Participation in inservice workshops has improved the quality of education provided in Alachua County Schools.	20.9	58.9	7.1	1.6	11.5
3. Participation in inservice workshops should be on a voluntary basis.	48.9	33.3	12.1	3.2	2.5
4. The county CREATE office has provided adequate information regarding inservice programs provided in the county.	13.5	48.5	21.1	9.0	7.9
5. Inservice workshops should include more hands-on experiences.	30.4	46.6	10.8	1.6	10.6
6. Overall, the workshop leaders have been adequately organized for inservice workshops.	24.9	61.5	3.3	.6	9.7
7. Input from teachers was obtained in planning inservice workshop programs.	15.8	52.1	14.6	1.6	15.9
8. The county CREATE office should provide information regarding workshops presented in other counties around the state.	24.2	51.5	11.6	2.5	10.2
9. The county CREATE office, through my school contact person, provided adequate information regarding all of the ways in which CREATE funds can be spent.	22.3	50.4	17.4	3.2	6.7
10. Inservice activities should not be conducted during pre-planning.	42.1	28.6	19.8	5.4	4.1
11. The state requirement that inservice participants must have a minimum of 10 hours before extension of certification credit can be awarded has increased the value of the workshops.	6.5	29.0	27.6	18.9	18.0
12. Overall, the quality of the workshops this year in the district has been good.	13.1	61.7	4.1	1.5	19.7
13. The CREATE contact person in my school has done a good job of informing faculty of inservice options.	40.4	46.2	6.1	1.3	5.9

Overall based on the responses to the questionnaires, the teachers appeared to be pleased with the CREATE workshops. For seven of the items, however, at least 10% of the respondents indicated that some changes could be beneficial. Items 4 and 8 were similar and respondents indicated a desire to be more informed regarding inservice programs offered in other schools in the county as well as programs in other counties around the state. For item 5 the majority of teachers expressed the desire for more "hands on" experiences during the inservice program. Teachers expressed some concern regarding the level of input they had in planning workshops. Over 15% of the respondents indicated on item 7 that their input was insufficient. For item 9, over 20% of the respondents indicated that they had insufficient information regarding how CREATE funds could be spent. Teachers expressed strong opposition to offering inservice activities during the pre-planning period. Over 70% of the teachers agreed with item 10 which stated that inservice should not be given during pre-planning period. Finally, almost half of the teachers (49.5%) did not believe that the 10-hour rule increased the value of workshops (item 11). Less than 40% indicated that the 10-hour requirement increased the value of the workshop. (The 10-hour state mandated rule stipulates that credit toward renewed certification can be earned only in inservice programs of 10 or more contact hours).

The 13 items summarized in Table 1 were also analyzed by comparing response patterns by: a) school level, b) level of teaching experience and c) number of workshops taken. No differences were found for any of these groupings except for item 7. Teachers at the high school level indicated more disagreement to this item than teachers at the elementary or middle school level. Over 20% of the high school teachers indicated that input for inservice activities was insufficient.

In addition to responding to the 13 items provided on the questionnaire

102 teachers took the time to write comments regarding the strengths and weaknesses of the CREATE workshop program. Among the strengths cited, several teachers felt that overall the inservice program was of high quality and was professionally beneficial to them. They felt their knowledge and skills had been expanded as a result of their participation. Others mentioned specific programs which were particularly useful.

Comments identifying workshop weaknesses fell into 5 categories: 1) when workshops should be offered; 2) the types of workshops to be offered; 3) funding for workshops; 4) county-wide communications and 5) the 10-hour rule for extention of certification credit.

The timing for inservice activities received the greatest number of comments. Suggestions varied greatly as to when workshops whould be offered but there was basic agreement that inservice during per-planning was unacceptable. While it is acknowledged that it is unlikely that a time can be identified for workshops which would be agreeable to all teachers the provision of summer institutes with stipends received many favorable comments.

The second area which received a great number of comments was with regard to the types of workshops offered. Several comments were made that suggested more inservice was needed, including follow-up sessions. Others suggested workshops on psychological testing, all types of abuse, and county-wide curriculum workshops. Several teachers commented that workshops on implementing new programs was not needed since teachers could read the instructions and manuals. Some teachers indicated a need to identify inspirational and exciting speakers for the inservice programs.

Several comments indicated that there was some confusion regarding expenditure of CREATE funds. The most frequent comment, however, was that funds were insufficient to support travel to state meetings of direct relevance to the teachers.

Finally, several teachers expressed their dissatisfaction with the new state mandated 10-hour rule. Several complained that the extended time period discouraged teachers from participating. Others felt that inservice was being dragged out to meet the requirement, and that increasing the amount of time was not necessarily related to the quality of the program. No one had a positive comment regarding this new change in inservice policy.

INTERVIEWS FROM SITE VISITS

After analyzing the questionnaire data the CREATE Council met and discussed the results. Using the results as reported above as a guide to interview school personnel, 18 members of the Council divided into 11 teams and visited the 34 public schools in the county. The Council members interviewed over 165 school personnel obtaining their suggestions as to how the inservice program might be improved for the 1985-86 school year. The results of this data collection supported the major concerns expressed on questionnaire responses as follows: 1) improving communications, 2) types of hands-on experiences desired, 3) role of teacher imput, 4) CREATE funding policies, 5) timing for inservice programs and 6) major concerns regarding the 10-hour rule.

RECOMMENDATIONS

Based upon data collected by questionnaires and interviews from site visits the evaluation committee of the CREATE Council submitted the following recommendations to the Council: 1) use the computer network to improve communications between the CREATE county office and public schools, 2) encourage workshop leaders to set aside some time to try out the ideas presented at the end and throughout the inservice program, 3) survey the faculty periodically to identify current needs and interest, 4) continue to develop summer institutes as a major mechanism for delivering inservice programs, 5) reassess the 10-hour rule and be more creative in deciding how this requirement can be met, 6) obtain more funds to support travel to conferences, and 7) change the name of CREATE workshops to CREATE seminars or CREATE staff development to avoid confusion with county sponsored workshops.

In summary, the Collaborative Resources for Educational Alternatives for Teacher Education program, "CREATE", in Alachua County, Florida, appears to be meeting preservice and inservice training needs of public school teachers and at the same time is providing an opportunity for university educators to interact and learn from people in direct contact with students. These consortium-centered teacher education programs will strengthen not only teachers in the field but will provide the most beneficial educational experiences for preservice students through the improved quality of university teaching.

Teacher Education in Israel - A retrospective look at the development of a system

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Perspective

Analyses of events and developments that occurred in the past are not only interesting as phenomena per se, but also as a guide to better understanding of the present and planning for the future. It is this assumption that was the incentive for conducting the present study, the aim of which was to disclose developmental trends in teacher education in Israel, as perceived by the educationists who were involved in its policy making, in planning and in implementation.

The present seems to be the right time for such an investigation, as teacher education colleges are in a process of "academization", that is, in transition from the practice of granting teaching certificates to one of granting academic degrees. Also, as the State of Israel was established only 37 years ago, most of the central people who were involved in the planning and development of the teacher education system are still alive and may serve as primary sources of information. It is important to note at this point that the Israeli Ministry of Education constitutes a centralized system that administers the Teachers' Colleges which prepare teachers for elementary schools (high school teachers are prepared in Universities).

Method

The study is based on the retrospection of fifteen educationists considered to have played important roles in the development of the teacher education system. The list of educationists was compiled on the basis of consultation with two university professors, experts in the history of education in Israel. The list included the former and the present general directors of the Ministry of Education, the former and the present Heads of the Teacher Education Departments at the Ministry , two chief supervisors attached to the central office; one teacher education curriculum expert; two university professors of education; three heads of teachers colleges (one of them, a religious college), three well known local supervisors of student teaching.

These fifteen educationists were interviewed in-depth by a doctoral student, who was specially trained for this purpose. The interview started with an open-ended question to allow for the emergence of a variety of topics, and was phrased as follows: "In retrospect, what can you tell about the evolution of the Israeli teacher education system?" The interviewer was instructed not to stop the flow of talk, unless the interviewee himself or herself came to a stop. In this case, when appropriate, the interviewer probed for more elaboration and clarification. The interviews were tape recorded and transcribed into protocols.

As this is a qualitative study, content-analysis seemed to be the best procedure to derive the desired information. The selected unit of analysis was a "thought unit", namely: one or more phrases that related to an idea (Fox, 1969)*. These units were analyzed with regard to emergent topics. The latter were classified according to underlying commonalities, and then were analyzed with respect to the "feeling tone" (ibid, p. 647) and classified as positive, negative or neutral. A further function of the content analysis was to learn about the latent intent underlying manifest expressions.

The results were summarized after two judges had reached a level of 90% of agreement regarding the classification and frequency count.

Results

Two hundred and fifty six units were counted and analyzed. Table 1 presents the distribution of the derived topics in descending order of frequency and their corresponding percentages.

Insert Table 1 about here

The retrospection of the educationists generated eight topics and a miscellaneous category, covering a wide range of teacher education issues, as follows: 1. *Teachers' Colleges vs. Universities* as the right place to prepare elementary school teachers was the first subject most related to. Policy makers argued about the relative advantages and disadvantages of both alternatives. Those who favored teacher colleges as they operated, stressed the importance of an "educational, intimate and supportive atmosphere, personal touch, and a greater degree of individuation than the universities could provide". In the opinion of these people, "large universities create anomy" and operate on a traditional basis intended to generate knowledge rather than on personal-educational development. "Colleges have their own idiosyncracies that pertain to individuation and personalization and to value-orientation". Those who favored university education advocated the transfer of elementary teacher education to the universities, they focused on the need for "higher levels of functioning on professional and academic grounds, the need to master a disciplinary body of knowledge in addition to education, as a tool for thinking and for interpreting social-educational phenomena through a wider and deeper perspective". An additional argument in this direction relates to the relatively low status of teaching, which "may be raised by the aid of teachers who have academic degrees". The process of academization is perceived by its advocates as constituting an extrinsic value of status as well as intrinsic values of rigorous study. The expressed assumption was that "subjects taught by university professors rather than by college teachers are more apt "to develop inquiring minds". Interestingly, the possibility of developing an educational ethos in the universities did not occur to the interviewees. However, this may be well understood as the Israeli universities strive for academic excellence, and promotion is based on publication of basic research mainly, and "the interest in developing educational environments is to a great extent lip service".

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* Fox, F.J., *The research process in education*, New York, Holt, Rinehart and Winston

2. *Curriculum* was another main topic referred to. This is not surprising, as many issues may be classified under this concept. Indeed, "curriculum" was so inclusive that a further breakdown of the topic seemed to be needed and generated the following: (a) *Aims* - subjects described the image of an ideal teacher as the aim to be achieved. The ideal teacher is described by most interviewees as one who is characterized by a value orientation who identifies with the profession, is enthusiastic about education and teaching. He/she is an intellectual who builds upon intuition as well as upon sound rationales, masters a wide range of professional strategies, competencies and skills.

Some of these aims are heuristic in nature, not amenable to operationalization, "hence no specific methods or means can be suggested; it remains to be hoped that they will be attained by way of identification with the teaching ideologies and examples of master teachers". However, the interviewees stated that while at the onset emphasis was put on ideology and liberal education, a clear shift toward professionalization and specific skills became more salient over the years. In the past not all curricula included a practicum - the rationale being that an intellectual person who is highly motivated to teach and has a wide liberal estimation will find the way. At present all curricula stress the importance of a practicum and of its integration into theory. This shift is especially salient in the Kibbutz Colleges. (b) *Methods* - The concepts that emerged in relation to methods were "models of teaching", "modules", "simulation", "microteaching", "encounter groups". These concepts were used to describe innovations that were introduced in the last fifteen years and which point to a relatively clear trend towards the professionalization of teacher education. (c) *Integration* is another salient aspect of curriculum. Complaints were expressed regarding lack of integration between theory and practice. Interviewees attributed the discrepancy between these two to lack of implementation, claiming that the need to relate theory to practice is very clearly declared at the conceptual and policy making level but that this intent and emphasis melt away at the level of implementation, probably because of lack of communication between theorists and practitioners. This situation leaves the students to make their own integration, which they seldom do.

A rather different aspect of integration seemed to evoke contrasting views: While some demanded complete separation and differentiation among the disciplines studied, others complained about lack of integration among related fields and educational practices. They advocated team teaching and directing the focus towards problems that are relevant to students. A topic which raised no argument related to the need to create stronger lines of communication between professors teaching theories, student-teaching, supervisors, co-operating teachers and policy makers. (d) *Pluralism* of the curricula is a feature in which displayed drastic changes. Although the system is still centralized, the past fifteen years have witnessed encouragement of pluralism: Graduating examinations were cancelled allowing for autonomous decision making regarding graduation demands; The planning of pluralistic curricula was encouraged: some institutions put a greater emphasis on behavior modification, others built upon humanistic or cognitive approaches, depending upon their own policy. All interviewees expressed satisfaction with this trend towards pluralism and institutional autonomy.

3. The Student Population went through three main stages, according to the interviewees. At the time the State was established (1948) high school graduates with high academic standing constituted the student-teacher population. During the next ten years a bad shortage of teachers, as a result of mass immigration, resulted in the establishment of many teachers colleges, not allowing for good student selection and opening college gates to almost every high school graduate who applied for entrance. So bad was the need for teachers that the service in the army, compulsory for both sexes, was postponed for after the study period and in some cases even cancelled. At the present time there is an abundance of teachers to the point that graduates of 1984-1985, have not even begun teaching and waiting for openings. This situation allows for rigorous entrance procedures and indeed, severe entrance examinations were put into practice. Some interviewees perceived the introduction of these exams as a symptom of the professionalization of teacher education.

4. Environmental-sociological conditions were mentioned as crucial factors in the development of the system. The abundance of opportunities in industry, technology and management positions drew away from teaching a significant number of talented persons. This phenomenon had its influence on the status of teaching, on lowering its prestige. It is for this same reason that some interviewees strongly advocated the academization of teacher education, hoping that this might raise its status.

The unforeseen and unpredictable influx of immigration several times created shortages of teachers and urgent needs to prepare them in short periods of time. These needs resulted in groups of teachers who after a period of several months of intensive preparation were sent to teach in small towns where immigrants settled. Not only was this a pupil population who presented severe educational problems, but they were taught by the least prepared and experienced teachers". Such unpredictable phenomena interfered with attempts to plan systematically ahead of time, thus a large number of institutions was established hastily.

The economical constraints that Israel is facing today is viewed by some as an opportunity to close small institutions of low standing.

5. The concept of Profession appeared to generate substantial disagreement. Some educationists expressed the need for better professional tools to prepare teachers, for curricula based on expertise in this field. They were dissatisfied with the lack of more specific and accurate diagnostic and prognostic instruments to predict good teaching and Some suggested the inclusion of research methodology as required courses for teachers. However, these views were not agreed upon by all. These are the two contradictory views raised in connection with professionalism as related curriculum.

6. Institution size: this topic emerged as a subject of concern, which is not at all surprising in view of the large dispersion of small colleges around the country, resulting in small numbers of students enrolled in many institutions. It is interesting to note that in the early seventies there were 64 colleges. This number has been steadily reduced to about 30 at the present time and the ministry's policy is to still reduce this number to only 12 colleges. The rationale underlying this intent was clearly expressed in the interviews: "The larger the institution, the more alternatives and choices it has to offer", "the greater the number of colleges, the less student and teacher selection", "large part of the budget can be saved by reducing the number of colleges". Some opponents to the idea of academization advocated large colleges that would be able "to compete" with teacher education programs in the universities. Others, however, found some benefits in small institutions as "against alienation and depersonalization": "Small institutions allow for more intimacy, more personal touch and friendly relationships...". Still others were concerned with a national issue, namely: "In view of the tendency to live in large cities, which can offer more job opportunities and mobility, it is important to have students study in the small towns in which they live. Thus, there is a greater chance that they remain there. This struggle between professionals and politicians is perceived as interfering with the system development.

7. Charismatic Personalities who had an impact on teacher education development were mentioned by some interviewees with reference to the ideal image of great teachers. These personalities are well known in the Israeli educational scene as leaders and varied in their characteristics: one of them was an expert in her subject-matter area and gained a reputation for her love of teaching and success in "infecting her students with love and appreciation of study". Two of these mentioned personalities were known for their educational ideology and ready to stand up for their ideas. Three were superb methodologists. Interestingly, all were considered to be completely dedicated to teaching, rather dogmatic in their views and great fighters for what they believed in.

8. College Teachers Two contradictory views characterize the reference to college teachers: On the one hand, the interviewees expressed their satisfaction with the demand for higher academic degrees, as: in the past most teachers held a bachelor's or a master's degree, only a few were Ph.D.'s. A large proportion of the student teachers' supervisors did not even have a bachelors' degree. This situation has changed entirely. Most of these supervisors now hold master's degrees and most subject-matter teachers hold Ph.D.'s. On the other hand, however, some dissatisfaction was expressed with regard to the ethos of the teachers, claiming that in the past teachers used to be value- rather than research-oriented. Their "life mission was to raise a generation of dedicated teachers ... they devoted all their time to their students". "College teachers have now more schooling, higher university degrees, they may be more professionally competent ... it seems, however, that all these were earned at the expense of dedication and enthusiasm ...".

9. "Miscellaneous" covers a wide range of topics, such as: (a) time element, (b) the phenomenon of teacher burnout. (c) the need to evaluate the system: "lack of feedback leaves us in an ambiguous position ... we never knew whether our programs were effective because of rapidly changing situations, which in turn changed criteria".

Feeling Tones

In addition to the contents of the ideas expressed by the interviewees, the emergence of certain "tones" (Fox, ibid.) could be sensed. These ranged from nostalgia to hopes for the future, from frustration and criticism to satisfaction. A nostalgic tone was associated with the time when students went into teaching because "they perceived teaching as their mission to educate, to help people become better, and as a central task of their lives", while at the present, "so many female students go into teaching because of its convenient hours and long vacations". "So many come to get a certificate just in case, but they don't intend to teach if they won't have to".

A tone of nostalgia was also evident with reference to teacher education that used to be value oriented. "At that time we had some ideals to accomplish, we wanted to establish a new society based on moral values and on freedom. There was an ethos of 'doing it together', through the aid of teacher education...".

Hopes for the future were expressed to with regard to teacher professional identity, to an intrinsic motivation to teach and to higher status and prestige of teaching.

Frustration was related to the fact, that the development of the system was incidental, depending upon political power rather than upon systematic deliberations and decisions made by professionals. Most of the feeling tones were, however, associated with satisfaction. Interviewees stated that given the difficult socio-economic condition, with a nation that was in a "melting pot" process, in a multi-diverse cultural society, the system proved to be efficient. "In view of the encountered difficulties - constantly changing societal demands, demographic conditions, cultural diversity, unpredictable changes in the student population - I have very high appreciation of what has been done ...", Could we hope for much more under our conditions!" In weighing the critical against the favorable remarks, it seems that the latter not only outnumber the former, but are also more substantial.

Epilogue

Having classified the interview materials into topics of reference, an integrative synthesis is now in order. It appears, that most topics may be better understood in relation to each other. They all share one commonality - dynamic change. Interestingly, the forces that brought about these changes are relatively more extrinsic than intrinsic, that is to say that they stem from environmental contingencies: Mass immigration resulted in the hasty establishment of small teacher training colleges and in shortening the length of time needed for certification. When the influx of immigration declined, these colleges, although superfluous survived by force of enertia. It is only at the present (1985-1986) that they are being closed as a result of economical rather than educational policy deliberations. In the same way, it is the technological developments that resulted in a clear change of student population, with the more intellectually able selecting to enroll in faculties of sciences, and study professions of higher status. The study of teaching became for many students a tool for social mobility. Thus a vicious circle was initiated: the relative low status of teaching was reinforced by its student population, which in turn reinforced the low status of teaching.

Not only the student population but also curricular aims and means changed as a result of technological developments. More emphasis is put on technology sometimes at the expense of the humanities, claimed most interviewees.

It is thus outer forces that had the main impact on teacher education. Is this a local or rather a more general phenomenon? To answer this question a comparative research analysis is needed. As far as Israel is concerned one may conclude with a relative degree of certainty that the rapid and drastic changes were enhanced by social and economical demands. In the case of cutting down the number of teachers' colleges, it appears that the result is expected to fulfill social as well as professional aims of raising the level of teacher education.

Whether these same changes would have occurred anyway as a result of inner educational professional needs is hard to tell. However, it is only natural to assume that at its onset, in the period of building itself, a system would be more centralized, less pluralistic, allowing for a narrow range of autonomy. After a period of establishment, of stabilization and creation of norms, it can afford decentralization, pluralism and autonomy, which indeed did occur according to the interviewees' perception.

Finally, could not the same and even more objective conclusions be drawn from analysis of formal documents? For the ones who are interested in outcomes only, the answer may be affirmative. However, for those interested in underlying deliberations, in doubts and hesitations, in the perceptions of the policy decision makers in retrospect, so as to understand more fully the dynamics and evolvements in the teacher education system, the answer may be different.

Table 1: Topics of reference in descending order of frequency

Topics	Number of references	Percentage of references	Subjects
	f	%	N
1. College vs. University	95	36.6	15
2. Curriculum	60	23.0	13
3. Students	21	8.1	10
4. Environmental Conditions	18	6.9	9
5. Profession	15	5.8	7
6. Institution size	20	7.7	6
7. Charismatic personalities	10	3.9	8
8. Teachers	10	3.9	5
9. Miscellaneous	10	3.9	3
		Total : 259	99.9

TEACHER EDUCATION AND IDEOLOGIES OF TRAINING: TECHNICALITIES AND POPULAR VISION AS MASKS FOR THE TEACHER COMPETENCE

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INTRODUCTION - This study intends to search for cultural and historical conditions that may explain some negative attitudes toward the learning-teaching process in specific subjects mainly within the realm of pedagogy.

There are several cultural and historical conditions in the Brazilian education and particularly in the teacher education programs that along history were embodied in our practices as truly ideologies concerning the teacher's practice that very often precludes critical thinking.

Several Brazilian researchers, from the stand view point of philosophy, history and pedagogy (Teixeira,1983, Saviani,1983, Paiva, 1984) have contributed to shed some light on this issue, stressing two main ideologies: the technical emphasis and the popular pedagogical vision.

Teixeira (1983) pointed out that the evolution of Brazilian educational institutions was paved by the gap between what it is 'the ideal' and what it is 'the real', and between theory and practice as well. These dichotomies at the service of the upper social classes' special privileges diminish the schooling possibilities of the underprivileged majorities.

Therefore, the Brazilian university was born late (1920) in a cultural and political context of strong dependency. The university organization was produced by legal documents instead of being geared by critical thinking derived from challenges faced in the concrete and actual practice by the educators.

I acknowledge the special suggestions made in an earlier draft of this paper by Professors: Juracy C. Marques; Arabela C. Oliven and Newton B. Fischer.

It is interesting to analyze the university expansion that took place in the last decades - specially in the fields of Human Sciences and Education - as a very good illustration of how the affluent social middle class extended its political support to governments as a bargain for university opportunities to be offered. (Oliven,1980)

A selective characteristic was connected with cultural and economic dependency by adopting foreign philosophical and pedagogical theories without any criticism. These theories were exceptionally rapid spread on teacher education programs and transformed themselves into potent ideologies. At the same time, these ideologies - in special the ones called technicalities and popular vision - cover the real function of certain practices being at the service of the maintenance of the social structure. On the other hand, such social structure protects privileges and avoids the education of teachers that are bounded to be competent and critical.

The technical emphasis has its origin in the modernization process connected to the stress on the development of the country through economic acceleration and it was imposed on the educational system by a Federal Law in between 1964 and 1974.

The idea was that education as an investment would yield better dividends if it were utilized to train manpower for very specific functions, separating planning from execution (Apple, 1985). This was particularly applied in teacher education programs throughout the country. Most educators were then specifically prepared to supervise teaching-learning methodologies, develop instructional materials, identify learners' problems, and prescribe solutions within the reach of the common classroom teacher. Therefore, schools were to be managed according to the model of a 'small enterprise'.

However, the educational funding was scarce, specific skills usually were not suited to concrete situations, and educators were lost missing a global vision to make out inferences and establish correct relationships to interpret concrete situations. The result was an utter lowering of the learning patterns, instead of the efficience that was anticipated as a final outcome.

The popular pedagogical vision has a later appearence in teacher education programs. As a matter of fact, it started in the 70s and it is still very strong. Its main reason and meaning has to do with a reaction to the technicality approach. The popular pedagogy stresses the authoritarian and parochial side of the technical movement in education that was present in the Brazilian education up to the 70s.

Paiva (1984) states that the popular pedagogy is a movement which has the purpose to secure the self management of the learning process. The teacher has not any more at his/her command the development of the courses or the decisions on contents and methodologies of teaching. The function of the teacher is not any more the one of transferring knowledge to the student. 'Knowledge' is supposed to be the result of individual experiences, an outcome derived from facing concretely difficult life situations whose most important function is to enhance the individual capacity to comprehend and solve problems in concretely real situations. As a consequence, all theoretical discussion and curiosity about new information and facts was discarded in favor of the mere exchange of experiences. The teacher was disallowed of his/her authority to offer anything valuable in the learning-teaching situation. The logic under this ideology has elements to embody an anti-intellectual attitude and conducts to an immediacy that leads to a lack of desire for reflexion and systematization of what it is learned.

The teacher capacity, his/her competence and even his/her teaching skills are evaluated and judged by his/her concretely social and political practice. If he/she is not that inclined by whatever reasons, then he/she will have to start to learn 'how to teach' to his/her group of students.

The research action proposes to recover the pedagogical 'eros' and 'ethos'. (Alves, 1984) The prior question is competence. It deals with Habermas' idea of 'communicative competence.'

Habermas (1980) discusses the 'communicative competence' as a change from 'instrumental interest' to 'communicative interest'. The 'communicative competence' results in a cooperative search for the truth.

METHODOLOGY - The research was carried out in a classroom experience focusing upon the teaching of a course called Philosophy of Education, a subject of the teacher education program at the School of Education, Federal University of Rio Grande do Sul. The team work for such endeavor was formed by the teacher herself, a 'monitor' as a student participant and observer, and two other teachers as referee to discuss questions and issues.

The basic question of this study refers to the student attitudes as a means of revealing the ideologies - technichalities and popular vision - and their behavior along the teaching-learning process.

Figure 1 shows some variables which were observed and analyzed as typical behaviors that uncover ideologized attitudes toward the meaning of the learning and teaching process.

TECHNICALITIES	POPULAR VISION
1. Packed solutions to be immediately applied	1. Reduction of the learning experience to personal needs
2. Difficulty to exchange ideas, express feelings and listen	2. Difficulty to generalize and express ideas in written or oral forms
3. Need for stimulation and guidance to perform tasks	3. Objection to use books or the library in the acquisition of knowledge
4. Preference for working with small texts, magazines, booklets and audio-visual material	4. Disapproval of the teaching tasks, in special the lecturing activity
5. Liking for group activity as an association of individuals, instead of searching for agreement.	5. Disappointment at any activity that requires independent thinking and deep individual involvement.

Fig. 1 - Variables that presumably make up a descriptive context of ideologized behavior and attitudes

Considering that this is an action research which occurs during the classes of Philosophy of Education there are three types of objectives: (a) the objectives of practice; (b) the theoretical objectives; (c) and the action objectives. The last ones were devised out of a jointly effort by the student group (40 in number) and the teacher through conservation and dialog.

THE OBJECTIVES OF PRACTICE - (a) To recognize the importance of studying philosophical theories in education along teacher education programs; (b) To identify ideologized attitudes and thoughts that mask the real work toward the 'communicative competence'; (c) To overcome contradictions of these ideologies unveiling hidden meanings through practices and theoretical discussions.

THE THEORETICAL OBJECTIVES - (a) To analyze expectations, production of subjectivities, modes of action in the concretely real world and the theories of philosophy of education; (b) To produce knowledge cooperatively through teacher and student discussion about concrete problems bridging the gap between theory and actual practice.

THE ACTION OBJECTIVES - (a) To learn how to articulate his/her own discourse; (b) To argue with the support of possibilities of generalization in order to clarify issues and reach a certain agreement over polemic question; (c) To listen and respect different opinions without diminishing their importance simply because they are not commom; (d) To avoid any reductionist type of approach, as well as the utilitarian immediacy of criteria for judgment.

The class activities developed by the teacher and the students were the following: (a) Analysis of the educational process such as dialog, cultivation, work, experience, practice and utopia (Plato, Rousseau, Kant, Hegel, Marx, Dewey, Montessori, Freire, and Nietzsche); (b) Each group of students (10 in number) studied one author and presented his ideas discussing them with the whole group of students and the teacher. The ability to demonstrate critical thinking in this presentation was expected as well as evidence of relationships between the authors' thought and the categories above mentioned; (c) After this presentation students were required to make an evaluation of what it was accomplished in the light of the objectives of practice, theory and action as well; (d) Interview with elementary, secondary and university teachers as a means of questioning them about the possibilities of educating the educator and their own actions as educators. The interviews were interpreted based on content analysis.

RESULT AND DISCUSSION - It is interesting to compare the student reactions during the first classes at the beginning of the course with the last ones. Figure 2 illustrates the differences in student behavior, attitudes and level of thinking, considering the observations taken during the first and last meetings of the class as a group.

FIRST MEETINGS	LAST MEETINGS
1. Identification of problems and issues according to personal experiences	1. Establishing relationships between what theories had to say and personal experiences
2. Difficulty in listening to the teacher's explanation about the theoretical thinking of philosophers	2. Intellectual pleasure in Listening to the teacher and dialoging about ideas proposed by famous thinkers
3. Trouble in listening to what the others had to say and difficulty in expressing their own ideas and feelings	3. Improved capacity of arguing and discussing ideas in terms of organization and fluency
4. Innocence about the presence of ideologies in their attitudes, behavior and thought	4. Awareness of the strong influence of ideologies in their own behavior, attitudes, and way of thinking

Fig. 2 - Student behaviors, attitudes and modes of thinking

Out of the groups there were two that did not acomplish any progress as far as the overcoming of the ideologized representation of the educational process is concerned. One of them persisted in being faithful to the technical emphasis on education without viewing it as technicalities, whereas the other one maintained the political and social position of the popular vision in education. One of the comments made by the group that persisted in the technical emphasis on education was stated as follows: 'Most problems in the learning process can be accounted for the lack of good planning'. One comment by the group supporting the popular vision: 'The most important learning is the one that comes from a wider interaction between people'.

The fact that two groups were not affected by the learning-teaching processes developed throughout the course was, indeed, quite important to stress the meaning and the elements of such positions. These positions were discussed by the whole group in the last meetings. Such discussions enhanced the possibility of achieving a better comprehension of the meaning of the ideologies in the educational views of each participant.

As it was mentioned before the students interviewed teachers with different levels of schooling: elementary, secondary and higher education. They asked teachers two questions: (a) How would you describe the concrete activities you usually develop in your actual practice? (b) Do you believe that teachers are educable?

Figure 3 presents the results of these interviews (34 in number) that were analyzed in accordance with the theories that were being studied. The teachers' statements of their real activities were interpreted by the group in order to be classified into appropriate categories which served as guides for the content analysis. The categories came out of discussions between the group and the teacher. Thus their origin is both theorical and empirical.

TEACHERS' ACTIVITIES	%	TEACHERS' EDUCABILITY	%
Dialog	20	Competence	23
Cultivation	8	Lost of 'eros' and 'ethos' in the pedagogical action	17
Work	5	Technicalities	17
Practice	29	Popular vision	23
Experience	35	Criticism of technicalities	35
Utopia	14	Criticism of popular vision	41

Fig. 3 - Content analysis of the interviews in accordance with theoretical and empirical categories.

The interviews were conducted after class discussions and theory studies carried out by participants.

The technical emphasis on education - technicalities - reduces the teacher to an 'officer' of the educational systems. Planning and execution are clearly separated. The teacher is assigned to execution, though planning is done elsewhere. Skills are trained on a very specific basis. The teacher is never asked to evaluate meanings and relatonships. Therefore, he is usually overwhelmed by pressions to show his abilities and transmit what he was transmitted.

The exceptionally rapid proletarianization of the teacher and the lost of command over his very activities bring him about the lost of the 'eros' and 'ethos' of his actual actions. Teacher education programs are developed on extremely technical bases. They are also planned elsewhere and therefore very much bureaucratized and controlled generally by outsiders. So, the teacher loses enthusiasm for being creative and at the same time fails to have any pleasure in what he/she is actually doing along his/her routine activities.

The popular vision argues against the authoritarian domination, but at same time this very questioning attitude is in itself ideologized since it ignores many important portions of the knowledge already available within the realm of sciences. It is another type of alienation where the subject is at fault with the very issue that he/she is intending to express as an opposition. As a result, the social and political participation lacks power to be efficiently enough to contribute to a transformation of the social structures. Criticism is reduced to a mere critical posture, closed in its own bounds, without contributing to any advancement concerning new horizons of possibilities. The teacher feels helpless perhaps because of the contradictions between the reductionist aspect of his concrete activities and the grandeur of the issues to be faced. He/she does not feel responsible any more for what may happen as a result to his/her pedagogical actions.

Freire (1982) draws attention to the importance of commitment. 'The first requirement for a person to engage in an action with commitment is the capacity of putting together reflection and action in whatever he/she is trying to do' (p. 16). It is obvious that commitment does not have a fertile field to happen in the teachers' present conditions of work.

The qualitative analysis of the teachers' answers to the interviews led us to the finding that 'dialog' appears in a context of education conceived by a traditionally humanistic posture, while the category of 'practice' is connected, more often than not, to the liberal pragmatism of Dewey, also in the context of the 'celebration of awareness' advocated by Freire and his followers.

The category of 'utopia' comes into sight as a vision of changes devised as possibilities of real transformations linked to the recovering of the 'eros' and 'ethos' in education. However, the most frequent category mentioned was 'experience'. It appears in different contexts like the ones refered to as a traditional vision, the ones connected to empirical and pragmatic approaches to existencialistic or even vitalistic currents of thought.

As regards the teachers' comments about teacher education programs it is stressed the lost of 'eros' and 'ethos' in the educational practices. Such comments can be observed either in the criticism of the ideologies or in the positions that favor the ideologies of technical emphasis and popular vision as well. The question over the teacher's competence is often associated with a critical attitude toward the technicality and popular vision ideologies.

Based on a final evaluation, it is possible to say that the objectives of practice, theory and action were only in part fulfilled, not only because all of them were not achieved, but also for the reason that some of them were accomplished at a certain level. Comprehension and attitude modification requires time. It takes, sometimes, many years for such an impact to be felt. At the same time, though, it must be recognized that these powerful messages are highly mediated by other elements that were not tackled in this particular study.

However, it is our assumption that this type of educational practice, in the classroom learning-teaching process, must be repeated to verify the persistent value of ideologies, the logic that informs their functioning and the counterveiling mechanisms through which they might be desentangled in the social interaction.

CONCLUSION

The development of this inquiry through participant observation emphasized again the question on the educability of the teacher. Are teachers educable? It is our assumption that to give an affirmative answer is to say that the question must be linked to the 'communicative competence' of the teacher according to Habermas' theory.

The content analysis of the teachers' answer and the interpretation of their meanings through theoretical categories, evidence the importance of the teachers' own commitment to analysing questions and issues that are involved in the very programs that are intended to develop their education.

Herein 'communicative competence' is defined as 'the cooperative search for the truth'. (Habermas, 1980) Discussions, dialogs, team work, and other several kinds of social interaction continuosly challenge such capacity of communication. The immediacy and the emotional self-reassurence are delayed in favor of a plain interest of being competent to accomplish an actual group communication.

The cooperative search is geared by the very learning-teaching process when all the participants are commited to find agreements after reviewing what it is already known. The same attitude is maintained when people are aware of their deffciences in terms of knowledge as much as professional skills. From this source it is possible to bring about new alternatives to teacher training programs. Ideologies are then unmasked and the interests that are embodied in their meanings start to become clear and better understood. At the same time, through these strategies, it is possible to regain enthusiasm, pleasure, personal power, and responsability over the teaching and learning process, i.e., the 'eros' and 'ethos' in education.

This is a giant effort to achieve the truth of the educators and by doing so win the battle of returning the educational resposability to their hands. This is not something that happens is a natural kind of evolution, it must be conquered by struggles where cooperation, solidarity and fights for what one believes have no small importance. Contraditions are not to be obscured, on the contrary they must be brought to light so that the elements are desentangled. Therefore, an understanding of social, political, historical, and ethical significances can be reached.

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PROGRAM FOR LEARNING COMPETENT TEACHING

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PROGRAM OVERVIEW AND DESCRIPTION

The Program For Learning Competent Teaching is a cooperative venture of Northern Arizona University's Center for Excellence in Education and the Flagstaff Public Schools. The Center for Excellence in Education is a teacher education institution born out of the university's former College of Education. Its developing curriculum is based upon the following:

The curriculum will

1. be competency-based;
2. combine theory with practice;
3. have a large component of experiences in actual school settings early in the program;
4. use educational technology extensively;
5. be visionary.

The Program for Learning Competent Teaching is the prototype for the new curriculum. The program combines all language arts and reading coursework into integrated curriculum for students of elementary teacher education, and delivers this coursework within the context of an elementary school environment. Students earn fourteen credit hours, attending classes and teaching in classrooms on-site at the elementary school from 8:00 A.M. to noon, five days a week for one semester. Two NAU students work in each participating classroom, teaming closely with the teacher. Students spend eight weeks working in a primary grade and eight weeks at an intermediate grade level. All teachers and the on-site directors meet once each week to evaluate, plan, and brainstorm.

Distinctives of the Program

The following aspects of the program are unique, and contribute to the efficiency and power of the project:

1. The program is totally on-site, in a self-contained laboratory facility adjacent to an elementary school. Students study and prepare in the lab (a 12' × 40' trailer) and then go into the school to teach their daily lessons to elementary schoolchildren.

2. Classroom teaching applications are carried out within a carefully-planned structure. NAU students are accountable for children's learning. Their lessons must fit the classroom program, the district curriculum, and the daily schedule of the school.
3. All University-level course content in the teaching of reading and language arts is integrated, thus eliminating redundancies and overlap. The curriculum program, composed of eight modules, covers the entire semester. A copy of one of the two-week modules is included in the Appendix.
4. Students are recruited during their Sophomore year. This is important because they need to test the waters of teaching as early as possible in their University career.
5. The program is competency-based, requiring the NAU students to show their grasp of academic background, methods content, teaching skills, and professional behaviors within the context of actually planning and teaching lessons in the elementary classroom. A list of all competencies and performance indicators is included in the Appendix.
6. School-university teamwork is strong. Members of the Center faculty team are at the school every day, actively teaching, observing, and solving problems. Monday afternoon seminars with Center faculty and teachers help everyone communicate and plan together. Teachers also conduct seminars for NAU students while their classes are covered by University personnel.

PROGRAM GOALS AND OBJECTIVES

Program goals and objectives are taken directly from four program components.

Academic Content. The goal is that all students will equal or surpass the academic learning of the students on campus as measured by comparing the results of objective test scores from the two groups. Objectives were developed by taking the competencies from those developed for on-campus courses, plus those added by the two program directors.

Methods Content. The goal is that students will learn and be proficient in the use of a variety of methods. Objectives are specific methods. Methods and teaching strategies are taught to all of the students in the lectures and seminars. Such generic methods can then be evaluated objectively with paper and pencil tests. However, the need for many more methods arises from the students' day-to-day teaching and the challenges they face individually in their classroom assignments.

Skills of Teaching. The goal is that all students will master the ten competencies and fifty descriptors developed by the program teachers and directors. Because mastery of the skills involved in the process of teaching occur with various degrees of understanding and proficiency, these goals and objectives are individualized for each student.

Personal Development. Both the goals and objectives for this component are personal for each student. The instructor's goal is student growth. To some extent, the instructors determine objectives because they choose most of the personal development seminar topics, but within the topic each student must select his/her own objective. The only common goal demanded by teachers and program directors is that each student be considered as a professional and behave accordingly.

THE PROCESS OF PROGRAM IMPLEMENTATION

With a cooperative program in which professors and classroom teachers have the major responsibilities and the goal is preservice training, a number of potential challenges exist:

1. Both groups must work within the schools' administrative framework.
2. The professors are primarily responsible for university student training and behavior.
3. The classroom teachers' primary responsibility is to the children and school.

Mr. Dave McKay, the principal in charge of the elementary school where the above program is housed, has been an interested participant. He and his vice-principal have worked closely with the district's administration, all of the teachers, and the university personnel. His leadership has been invaluable in correcting and avoiding many problems.

The two professors directing this program have had a team approach from the beginning. Each one has assumed the part of responsibilities which best suited his/her past experiences and interests. Since this program was started with no prior preparation time for the professors, all of the planning and implementation took place under the strain of immediate need. Fortunately, the planning was thorough enough that no major unforeseen problems developed.

From the syllabi for the five courses included in the block a comprehensive list of competencies was developed. These competencies provided the core of the content taught in daily lectures and seminars in the trailer which housed the NAU students.

Students worked in the classroom to which they were assigned. They were responsible for preparing lesson plans and teaching children. Often methods and materials were learned as a result of the teaching needs, as well as being learned from prepared lectures and seminars. Although lesson plans were checked by the professors, teachers had the responsibility for setting the environment where those lessons could be successfully taught by the student. Formal teaching of different methods and academic content was the responsibility of the professors, but much informal learning occurred as a result of classroom teachers' work.

Helping students learn teaching skills was a time consuming and difficult task. The two professors and the fourteen cooperating teachers developed a list of ten basic teaching competencies with five examples for each competency. This instrument, titled "Teaching Competencies," served as an evaluation checklist and as a teaching/learning checklist.

Personal Development was the title for the "fun" part of the program. Twenty speakers came to the trailer and school. Topics were extremely diverse, such as: personal grooming tips, relaxation techniques, time management, teaching culture with puppets, etc. Some notable speakers were "loaned" to the program, such as: Roach Van Allen, Neil Postman, and Wilson Riles. Most of the other guest speakers were local professors, administrators, teachers.

Developing student self-image was an important concern of the professors. The professors assumed that student self-image would be enhanced only through successful accomplishments. In all cases, except evaluation of academic knowledge, students were compared only to themselves and helped to improve. Many times areas targeted for improvement were jointly determined by students, professors, and teachers.

Evaluation was difficult, as it always is in complex situations. Academic evaluation was easier, and in part accomplished with objective academic tests developed to compare the on-site students with those on campus. Actual statistical comparisons will not take place until the Fall semester of 1986. The teaching methods and their implementation were evaluated informally by teachers and professors. Personal development was self-evaluated. General skills of teaching were evaluated by students, teachers and professors. A unique in-basket evaluation, based upon actual classroom situations, was developed as a result of studying business practices. This approach appears to have a great deal of potential.

Results from the program far exceeded expectations. All twenty-eight students developed acceptably, although one decided not to become a teacher. They felt they had worked much harder and longer hours than if they had been on-campus but they all expressed great appreciation for the learning and self-confidence acquired.

All fourteen classroom teachers involved in the program were given three graduate credits. They took an active part in supervising their students' teaching and related activities. All teachers attended a planning/learning session once each week. At the session, plans for the coming week were discussed, along with problems, ideas, and issues. At the end of the semester, most of the teachers were very enthusiastic about continuing. A few did not want to continue. The common concern was the amount of time and effort required. The teachers who chose to return did so because of professional commitment and personal development. The school district granted each teacher one day's leave to visit other classrooms or schools.

Although the program is being considered an unqualified success, it requires a high level of sustained effort and cooperation. Possibilities for changes in traditional university pre-service curricula and university-public school relationships based on variations of this model appear extensive.

EVALUATION DESIGN AND METHODS OF ANALYSIS: THE FIRST SEMESTER'S EXPERIENCE

The evaluation system for NAU students consisted of:

1. Academic testing, using multiple-choice and essay formats similar to on-campus courses. These will be compared with students in the on-campus program.
2. Pre- and post-tests for each of the eight modules in the program. These tests were graded by the students themselves. They kept records of their scores in their own files.
3. Anecdotal records, kept by students in their files, noting lectures and seminars attended, readings they had done, and the triumphs and challenges of the week.
4. Competency and Performance Indicator checklists, for students to keep track of competencies and performance indicators achieved each week.
5. "In-basket" activities, developed in consultation with AT&T.
6. Weekly lesson plans, prepared by students in advance, and critiqued by Center faculty in individual conferences with each student.

7. Periodic evaluation conferences held with classroom teachers, student teams, and Center faculty.
8. Videotaping and classroom observation of teaching, followed up by individual conferences between students and Center faculty.
9. Friday Reflections, written anonymously by each student and turned in as a post-script to each week. These reflections were personal, open, frank, reactions to the week's stresses and successes.
10. A Final Reflection, required from each student, wherein each individual described the changes that they felt had occurred for them, both cognitively and affectively, during the semester.

Presently, in the second semester of this program, objective pre- and post-tests are being given to all students enrolled in the reading/language arts method courses. A series of T tests will be run to determine if there is a significant difference in learning. The same kind of comparison will be made with an attitudinal survey.

Evaluation systems for teachers, elementary students, and the school:

Evaluation of the effect of our program upon the life of the school took the following forms:

1. Building Principal Dave McKay held group meetings and individual conferences with teachers to discuss problems and attitudes toward the program. These meetings were frank and open.
2. Center faculty met with each teacher individually on several occasions, to discuss the impact of the program on that teacher's classroom.
3. Teachers were asked to participate in the development of an evaluation format for our NAU students' teaching. The format was designed for teachers and Center faculty to use in evaluating the NAU students. This project brought about much discussion among the teachers about the role of evaluation and supervision in teaching.
4. At the end of the semester, teachers were asked to write reflections about the experience--what it had meant to them personally and professionally.

RESULTS OF THE EVALUATION

By May of 1986 objective results will be available comparing students in this program with on-campus students in academic learning and attitudes towards teaching and preservice training. Most of the evaluation was qualitative, personal, and based in reality. Globally, we can make the following observations about outcomes for our students:

1. Students were successful in their academic learning and their teaching competencies, far beyond their expectations and our own.
2. Students gained a clear-eyed view of their potential as teachers.
3. Students' self-concepts and sense of personal power were enhanced.
4. Students emerged from the experience more idealistic, altruistic, and dedicated to teaching than when they went in.
5. Teamwork, sharing, and professionalism were learned naturally.

In summary, we determined that our presence in the school had some tangible effects:

1. Teachers who made the most of the enthusiasm and expertise of the NAU students assigned to them felt that they had gained benefits in terms of small-group instruction, remedial and enrichment activities, bulletin boards, learning centers, and specially-made games for their students.
2. Teachers became more aware of their role as professionals, accepting responsibility for helping develop the skills of aspiring teachers.
3. NAU student enthusiasm was evident in the school, and teachers and administrators appreciated our students' presence at PTO meetings and other non-required activities.
4. A steady stream of visitors, dignitaries, and media people through the school brought visibility and positive publicity for the school.

POTENTIAL FOR ADOPTION OR ADAPTATION BY OTHER INSTITUTIONS

This program can be adopted by any group with the same purposes and goals. The tremendous potential of this program, however, is that it can be adapted to other goals in teacher education. This particular program is designed to include competencies from language arts, reading, and children's literature courses taught on-campus, but other methods courses would work just as well.

The Flagstaff School District administrators, from the beginning, saw this program as a way to maintain and develop professional interest in the district. They took complete initiative in explaining procedures, involvement, and goals to their Board of Trustees. The building principal and assistant principal were active participants from the beginning. Mutual enthusiasm and goals were essentials. As a result of administrative teamwork, minor problems never developed into major problems.

Although the tone was established by the administrators and program directors, the teachers willingly accepted their roles. All teachers were volunteers. Most of the teachers accepted the work and responsibilities because of their desire to see the profession improved through the improvement of preservice programs. Without such a high level of professionalism on the part of teachers, this program would not work (unless other kinds of compensation could be implemented). Teachers worked very hard, but most of them did choose to be included in a second semester.

Historically, burnout has been a major problem for on-site programs--burnout of administrators, teachers, and university directors. Probably one major key to solving the problem is the teamwork of directors. They must have common goals and be compatible team members, day after day. Each must be willing to accept a share of the work, because time management can be a major problem. Many on-site decisions must be made "on the spot." Anyone choosing directors for such a program must take compatability and background of team members into account.

Although this program can be *adopted* as it is, its greatest potential is that it can be *adapted* to a variety of goals, purposes, course content, and school district needs. Flexibility is built into the framework of the system.

Implications and Conclusions

In the final analysis, a program is effective only if it touches and changes people in some way. We have evidence that this happened, not only for our students, but also for the teachers and the elementary children who participated with us.

For the program to continue to grow and flourish, however, several issues need consideration:

1. The intense supervision and involvement of Center faculty on-site must continue. (So-called "field-based" programs sponsored by other Universities have failed because they lacked the constant presence and professional involvement of school-wise University faculty.) The implication is that the issue of FTE and faculty load must be examined and resources reallocated to support programs of this nature.
2. Because we must depend upon the schools for our laboratory, it is vital that the program have a good effect upon the school. There must be benefits for the classroom teacher, the children, the school, and the district. Therefore, a strong partnership must be drawn between the Center and the school district, with shared priorities, goals, and support.
3. Success of the program, ultimately, depends to a great extent upon the classroom teachers with whom our students team. We must have opportunity to select the very best teacher models for our students to emulate. Therefore, there must be some sort of professional recognition or reward system for these individuals, so that the role of "field-based

teacher educator" is looked upon as a professional plus. (Commitment of time, energy, and patience is extremely heavy for the teachers who participate in the program.)

4. Evaluation of the program must be long-range as well as short-range. Students who participate in the on-site block experiences should be followed into their student teaching and into their teaching positions, to determine the effects of the program upon their teaching successes and problems. This work requires resources and support, but it provides rich research opportunities for Center faculty and graduate students. All evaluation tools must be upgraded and adapted as the program grows and changes. Much work needs to be done, for example, in defining the parameters of truly competent teaching.

5. Time is a major consideration. Integrating University coursework into blocks is efficient. The structure eliminates overlap. Academic information and methods are learned almost on the "first bounce" because opportunities to apply the knowledge are immediate and challenging for our students. At the same time, however, because of the constantly-expanding classroom responsibilities of our students as the semester progressed, and because of the necessity to adjust, almost daily, to the school's schedules, we found ourselves in a crunch for time, even to deliver the course content in its stripped down version. We also wanted to do more in the areas of ESL, Bilingual and Multicultural Education, and the teaching of Special Needs students in the regular classroom.

   The implication here is that we need to expand our block programs and revise schedules accordingly. This means that we must exercise more control over our students' programs of studies from the time they enter as Freshmen, so these big blocks of time can be allocated in advance.

6. A final point is that although we have a promising model for improving teacher education, that model requires that Center faculty who coordinate the program must themselves demonstrate strong teaching and teamwork. They must know their academic background and methods content so well that they can share their knowledge with students in flexible situations, teaching "on-demand" as changing situations require. In addition, these individuals must be school-wise, understanding how schools and classrooms function. Their teaming must be natural and done by choice, if the program is to succeed. Our team had these attributes and opportunities. We enjoyed the work, and our students reaped the benefits.

Summary

Our first two semesters' experience with the integrated on-site reading and language arts program was successful. We all accomplished a great deal, and learned something new every day. We were able to do this because of the support of Flagstaff schools and of the administration of the Center for Excellence in Education. A key element was the teamwork we enjoyed with classroom teachers and building administrators at Christensen Elementary School.

Finally, we must keep the concept foremost in our minds that teaching is an art. It is not a discrete collection of performance indicators, check-list evaluation items, or test scores. It is highly personal, intensely social, creative work. Our programs must model the art and skill of teaching, because . . .

> . . . it is the behavior of teachers in classrooms that
> will finally determine whether or not our schools
> meet or fail to meet the challenge of our time.
>
> --Arthur Combs

IMPROVING MATH AND SCIENCE TEACHING

FRIDAY, 18 JULY

1400 - 1530

MULTIPLE TALENT TEACHING IN THE FRESHMAN CHEMISTRY LABORATORY

Dale A. Hammond
Brigham Young University - Hawaii Campus
Laie, Hawaii 96762

In 1968, John M. Culkin, Director of Communications at Forham University, and frequently associated with Marshall McLuhan, compared two types of communicators. The one communicator spends his greatest effort in researching his audience and whose message is carefully prepared to reach that audience. This person is the advertising man, and if his message isn't understood HE is fired. The other communicator spends his greatest effort researching the message. This person is the classroom teacher; and if his message isn't understood, the AUDIENCE is fired. Although he apologized for this metaphor, the message in all too many cases is appropriate. (1) To be effective classroom teachers, we must not only have researched the message, but also carefully researched the audience to insure their understanding of the message. It is this combination that I would like to discuss here.

For several decades, Calvin Taylor and his group at the University of Utah have been researching methods of predicting career success. They have found little or no correlation between grades and success as physicians, scientists, engineers, teachers, executives, etc. (2) Research indicates that 70 percent of the highly creative individuals are not recognized by the standardized examinations or by IQ evaluations. (3) In addition, research indicates that the average IQ can be raised by as much as 10 points by training for creativity. (4) One person commented to Dr. Taylor that this was one of the best guarded secrets in education.

If IQ and grades don't necessarily predict success, what does? What does the world reward? Just a cursory glance at the world around us will tell us that the world rewards those who can make wise decisions, communicate effectively, plan, create and forecast; and presently to those who possess those talents naturally, for there is little or no training to develp them in the present educational programs.

In order to more fully appreciate this, let us build some background in some theories of the intellect. Fig. 1 shows John Guilford's theoretical model for the structure of the intellect. It consists of a 4 X 5 X 6 cubic matrix containing 120 possible developmental areas. (6) Let us examine this structure in a little detail.

CONTENTS: These are the inputs to the intellect, and range from the concrete of behavioral, to the highly abstract of semantics, i.e., from the sensual perceptions of the world around us to the completely abstract formalism of mathematics and symbolic logic.

OPERATIONS: These are the processes used by the intellect to act on the inputs, transforming them to the outputs. These might be mathematically analogous to mapping functions. There are generally five classes of these, but essentially an infinite number of functions within each class as a result of each individuals unique set of experiences. We need to examine these operations a little more closely.

COGNITION: This involves the "perceiving" of the input, and is a function of the level of intellectual development of the individual, i.e., a normal child of 8 would not "perceive" algebra as an input upon which he could operate. This might be analogous to a step function which maps a continuous variable onto increments, e.g. weight of an object to be mailed onto postal rates.

DIVERGENT PRODUCTION: This uses the "perceived" input as a point of departure from which to expand, probe, explore, diverge, etc. and is analogous to mapping from M space to M + N space. An example of this might be the proliferation of the various micrcomputers from the original concept formulated at Texas Instruments, to the multitude of micros available today such as Apple, IBM-pc Atari, Commodore, CONVERGENT PRODUCTION: This utilizes the available "perceived" and "diverged" data to converge to an appropriate conclusion, i.e., mapping from M + N space to M space. We might use the analogy here of chosing a leader from a group of many candidates, or selecting a dessert from a sumptuous selection when only one dessert is allowed.

EVALUATION: This is the highest level operation and involves determining the correctness, appropriateness or accuracy of the information being processed. This is the type of operation that the judge and/or jury must utilize in order to arrive at a just and true decision in a court case.

PRODUCTS: Not only are these the results of the intellecutal processing, but they indicate the level at which the processing took place. Let us also look at these more closely.

UNITS: These are items of information, the facts available, such as "the earth is round", water is a liquid at room temperature, etc.

CLASSES: These are combinations of units with common elements, such as teachers, with subclasses of elementary, secondary, university, etc.

RELATIONS: These establish the connections between units or classes, e.g., the laws of science such as the law of gravity, Newtons laws of motion, grammatical structures, flow charts for computer programming, the structure of a symphony, etc.

SYSTEMS: These are the organized structures such as the periodic table in chemistry, chemical equations in general, period music such as baroque music, etc.

TRANSFORMATIONS: A process which accomplishes the changing of one unit or class into another, such as the transformation of 36 eggs into 3 dozen eggs, translating one language into another, or in its more sophisticated form, the transformations of Quantum Mechanics.

IMPLICATIONS: This involves the extensions made on theories, and extrapolations of assumed or discovered antecedents or consequences. This could be represented by the extension of Dalton's atomic theory to give the Law of

Multiple Proportions. This represents the highest level of intellectual processing presently understood.

What are the implications of this to our interests, that of teaching. In the traditional academé, particularly on the university level, the inputs generally include all four CONTENTS levels, i.e., behavioral through semantic, with the emphasis on the higher level inputs. Similarly, we would ideally desire the outputs to include all six PRODUCTS, units through implications, and the processes or OPERATIONS to include cognition through evaluation. In actual practice, however, we find that the actual processing on the part of the student frequently involves only cognition and memory, and the outputs frequently do not go beyond relations in terms of true understanding. This has to do partly with the intellectual development level of the individual student, which we will not have time to deal with here, but also partly because no specific effort is made to train the students in the higher levels of productive thinking which will in turn enhance the possibility of achieving the higher levels of products or outputs. Taylor et al have stated that as few as six to ten of the total 120 possible developmental areas are utilized in the traditional academic programs. (7) We do not provide training, or often even any experience in the higher productive thinking skills. Yet, it is these skills that are most necessary for decision making, planning, creating, forecasting and communicating, those talents so highly sought after and rewarded in the "real" world. Taylor has said this in a very blunt way as: "the best new pay dirt for educational reform now scientifically 'available for mining' is in the non-intellegence, but still intellectual area. This is because the extremely large majority of man's high-level talents are of the non-intelligence intellectual type and nearly all of these talents tend to remain dormant in typical academic classes." (8)

Let us take a closer look at Taylor's work, and the program they have developed for building the productive thinking skills by focusing on multiple talents. A talent profile on any given group shows that about 10 percent will be highly gifted in any one talent, say academic talent, and 50 percent will be above average in that talent. However, if we add an additional talent consideration, the percentage of gifted and above average will go up for each additional talent, and with six talents, 30 percent of thegroup will be highly gifted in at least one talent. Two educational media specialists, Darrel Allington and Vern Bullough, have conceptualized these ideas in the form of a Multiple Talent Totem Pole shown in Fig. 2. In this profile of an actual group, we see that no one is at the top or the bottom in all areas, and everyone is above average in at least one and below average in at least one area. In Taylor's program, specific efforts are made to spread the class and study hours in such a manner that all of the talent areas are emphasized, not just the academic. This is illustrated in Fig. 3. According to Taylor: "this approach provides the possibility that 9 out of 10 students in a class can employ at least one talent with above average efficiency both for acquiring knowledge and for solving problems. This student-centered, talent-focused approach holds the best hope of systematically reaching each and every student in our classrooms and of finding promise in all students from all parts of our society. ..."

APPLICATIONS TO TEACHING AT BYU-HAWAII CAMPUS

What does all this have to do with the teaching of chemistry, for which the University pays my salary? The introductory chemistry course serves all future technical professionals, e.g., the medical arts, the physical and biological scientists, engineers, etc. Each of these can serve their professions more effectively if their talents in these six areas are utilized to maximum advantage. This can only occur through effective training in each of these areas. However, there is even a greater advantage. Studies carried out to date indicate that not only are great strides made in the development of the other talents, but that in the process the students gain a greater mastery of the academic material. (10) That is, by training for the additional talent areas, the students are looking at the academic material from many different perspectives, and this causes a deeper level of acquisition. As Jay A. Young has said:

"to attain true understanding, they (the students) must actively adopt, as their own, the arguments presented, recreating these conceptions in their own mind: That they must become, in a sense, the original investigator, becoming personally persuaded, as was the original investigator, of the reasonableness and rectitude of the conclusions reached." (11) And, as Guilford has said, when creative thinking takes place, there is transfer. Thus, cognition develops in the process of gathering data and working with it in different ways. Therefore, implementation of the mutliple talent process in the general chemistry program should result in a greater depth of understanding of chemistry, as well as a development of the non-intelligence areas of the individual.

IMPLEMENTATION IN THE GENERAL CHEMISTRY PROGRAM

Early in my teaching career, I was introduced to a very unusual chemistry laboratory manual written by Jay A. Young entitled "Practice in Thinking". (11) In it, he proposes that a laboratory program should accomplish three things: 1. Pose a solvable question to the mind. 2. Help the student to develop an ability to select a method, a laboratory approach, which will yield reliable data related to this question. 3. Require the student to depend upon valid data, obtained in the laboratory, when he forms an answer to this question. The proper use of this manual requires students to conceive testable explanations to the solvable questions posed, test them in the laboratory, and give written and oral reports on them. Having utilized this program for several years, I was ripe for the picking when I became exposed to Taylor's concepts of multiple talent teaching, for it is a small step to modify Jay A Young's program to incorporate multiple talent teaching.

Let us see how this works in the actual course. Early in the course, the students are introduced to the concepts of divergence, convergence and evaluation, and given some practice in doing these on chemically related topics. For example, in a unit on atomic theory, a student may be asked to diverge on all of the ways the concept of "atom" is utilized in science, obtaining such answers as ions, the building blocks of molecules, "units" of the mole concept, etc. Following a timed trial, recognition is given to those students who have the most responses , those who have responses in the most categories, and those who have the most original or unusual responses, thus building an element of competition which stimulates effort. Or, given a list of methods for gathering certain data they may be asked to converge upon the best method for gathering that data, and evaluate why that is the best method. As they gain proficiency in these productive thinking talents, they are then branched out into the laboratory program where they are given a solvable problem such as: "Wrap a small piece of filter paper around the bulb of a thermometer. Soak the filter paper in acetone; then blow gently on the filter paper. Why did the thermometer indicate a drop in temperature?" (12) The student is then required to "create" a testable hypothesis (or hypotheses) to answer the question asked, "plan" experiments to test those hypotheses, "forecast" the results of those experiments, "decide" whether the data supports or denies the hypotheses on the basis of the experimental results, and "communicate" all of this to the class and the teacher both in oral and written form. In the process of this, the student is given instruction in the fundamentals of each of these talents, such as for PLANNING: ELABORATION - the ability to tell what you want to do; SENSITIVITY TO THE PROBLEM - the ability to tell why and when something should be done; and ORGANIZING ABILITY - the ability to organize the materials, time and resources necessary to get it done.

How has all of this worked out in practice? Our program is designed around the concept of a Science Learning Center. Here we have a collection of reference materials pertaining to all aspects of the program for the students' use from 8:00 a.m. to 9:00 p.m. each week day. Our students are expected to spend 4 to 5 hours a week on the laboratory program, 2 hours of which they meet in a scheduled laboratory period for instruction, supervision and assistance. The additional hours are worked any time that the student is free during the hours that the Science Learning Center is open. No record is kept of this time, but the students are graded on the quantity and quality of the questions they have solved, so it shows up if they don't put in the time. The students work in pairs on their projects and give an oral report to the whole laboratory group every other week on the progress of their projects. At this same time they also turn in a written report. These are evaluated in terms of their English, industry in the laboratory, etc., and the five talent areas evaluated for strengths and weaknesses. Lectures are given regularly, but there is also available to the student considerable additional information in the form of programmed instruction, movies, film strips, film loops and additional texts and references, for which they may receive additional credit when properly documented. When the student feels ready, and within a given deadline, he may take an exam in the Science Learning Center over each unit. If his grade on that exam is not satisfactory to him, he may take a repeat exam on the same unit to raise his grade. However, there is a 10 percent penalty on the repeat exam to encourage the students to properly utilize their time. In addition, there is now under development a student packet in each of the talent areas which will instruct them on how to apply the techniques of that talent area to the production of a special project involving any one of the units covered in the course. Each student will be required to carry out at least one such project in each of the 5 talent areas.

It is felt that the application of this program will bring about an increased understanding and utilizability of the concepts and facts of chemistry through the transfer that takes place through the multiple talent approach. This certainly is important as a basis for future study in their chosen profession, and is the main reason they are taking the course in the first place. It is also felt, however, that education should be a preparation for life, to develop an individual who can function effectively in society and contribute to society by his ability to think formally, make wise decisions, plan, communicate effectively, etc. It is for this purpose that that our program is multiple talent oriented, to better prepare the individual for the competition of the real world and to enable him to render better service to his chosen profession.

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FIGURES

(1) The Structure of the Intellect	Reference (6)
(2) Multiple Talent Totem Pole	Reference (10)
(3) Distribution of Class Hours	Reference (9)

THE STRUCTURE OF THE INTELLECT

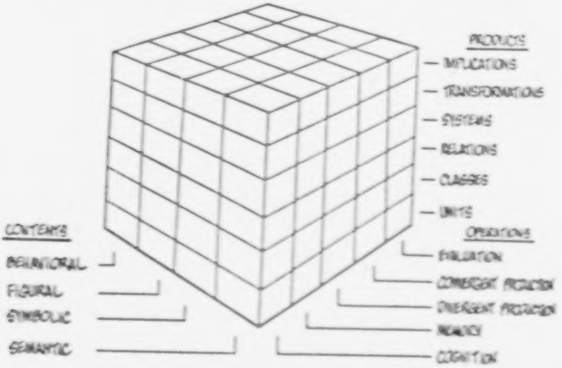
PRODUCTS
IMPLICATIONS
TRANSFORMATIONS
SYSTEMS
RELATIONS
CLASSES
UNITS
OPERATIONS
EVALUATION
CONVERGENT PRODUCTION
DIVERGENT PRODUCTION
MEMORY
COGNITION
CONTENTS
BEHAVIORAL
FIGURAL
SYMBOLIC
SEMANTIC

FIGURE 1

"THE TAYLOR TOTEM POLE"

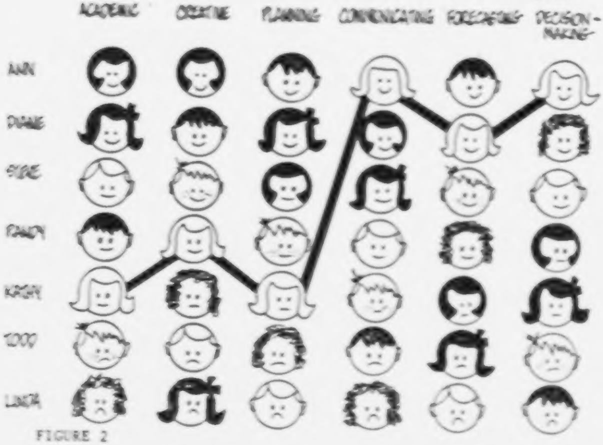
ACADEMIC
CREATIVE
PLANNING
COMMUNICATING
FORECASTING
DECISION-MAKING
ANN
DIANE
STEVE
RANDY
KATHY
TODD
LINDA

FIGURE 2

TWO EXTREMELY DIFFERENT WAYS OF DISTRIBUTING 24 CLASS HOURS
(WITH AN "X" FOR EACH CLASS HOUR)

FIGURE 3A

DIFFERENT TALENT PROCESSES IN STUDENTS

CONTENT ACQUIRED BY STUDENTS

	Academic Talents	Creative Talents	Communication Talents	Planning Talents	Decision Making Talents	Forecasting Talents	Other Types of Talents	TOTALS
Language Arts	xxx							xxx
Social Studies	xxx							xxx
Humanities	xxx							xxx
Arts	xxx							xxx
Biological Sciences	xxx							xxx
Physical Sciences	xxx							xxx
Mathematics	xxx							xxx
Other Subjects	xxx							xxx
TOTALS	xxxxxx xxxxxx xxxxxx xxxxxx	0	0	0	0	0	0	24 x's Grand Total

FIGURE 3B

DIFFERENT TALENT PROCESSES IN STUDENTS

CONTENT ACQUIRED BY STUDENTS

	Academic Talents	Creative Talents	Communication Talents	Planning Talents	Decision Making Talents	Forecasting Talents	Other Types of Talents	TOTALS
Language Arts		x	xx					xxx
Social Studies		x		x	x			xxx
Humanities	xx	x				x		xxxx
Arts		x	x				x	xxx
Biological Sciences	x		x		x			xxx
Physical Sciences	x	x		x				xxx
Mathematics	x				x	x		xxx
Other Subjects				x	x			xx
TOTALS	xxx xx	xxx xx	xxxx	xxx	xxxx	xx	x	24 x's Grand Total

FIGURES 3A & 3B: THE TWO STUDENT-CENTERED DIMENSIONS OF CONTENT AND PROCESSES

A RELATIONSHIP AMONG HUMOR, MATH ANXIETY, AND REMEDIAL MATHEMATICS LEARNING

Egon Mermelstein

Academy of Aeronautics

Humor has been acknowledged as a facilitator of learning. Mc Luhan expresses what many students have believed, "What is learned with laughter is learned well". (1967, p.10) Rogers (1967) maintains that a teacher's sense of humor promotes learning. Robinson (1977) asserts that not only does a teacher's sense of humor enhance learning and fosters the student-teacher relationship, but it can also provide the vehicle for developing the student's ability to relate in a warm way to others.

Despite its acknowledged importance, Robinson (1977) states that few attempts have been made by educators to make deliberate use of humor in the classroom. More recently suggestions to incorporate humor in the school curriculum have been encouraged by Krogh (1985) and Saltzman (1985). Krogh emphasizes four features of humor, based on Ziv's research with children, for classroom use, while Saltzman provides laughter seminars for teachers. Nevertheless, neither Krogh nor Saltzman provide empirical data to support their claim that humor promotes learning. On the other hand, Fine (1976) suggests that there is anecdotal evidence that humor may not improve performance, one measure of learning.

While there may be a question whether humor enhances learning, almost universal agreement exists that anxiety impedes learning, especially in remedial mathematics programs. Hunt (1985) argues that many of the remedial programs, instead of alleviating this anxiety reinforced it. These programs, he maintains, are fraught with the same drawbacks that caused the math anxiety in the first place. If we want more students prepared in mathematics, Hunt (1985) asserts then new approaches to math anxiety must be considered.

Humor as an approach to decrease math anxiety and thus promote learning has not been attempted; however, several approaches, primarily psychological in nature, have been tried. After a brief discussion of these therapeutic approaches, a relationship between humor, math anxiety, and math learning will be formulated.

The rationale for counseling or therapy is predicated on the belief that negative feelings about mathematics get in the way of learning unless these feelings are identified and treated. See Hunt (p. 33, 1985). One of the various therapeutic methods is Behavior Modification of which Aiken (1976) is a strong supporter. In contrast to individual desensitization of Behavior Modification, Tobias (1978) and Kogelman & Warren (1978) use group desensitization, a kind of encounter group, where individuals relate their negative experiences. Therapuetic approaches, regardless of whether they are individualized or group, operate on schedules of reinforcement or the release of pent up feeling and locate the problem within the individual. The individual who experiences math anxiety is perceived by the therapist as having a learning disability; an inability to face mathematics problems without experiencing considerable tension. Thus, the therapeutic point of view seeks to treat the individual by desensitizing him or her. Yet from a different viewpoint, math anxiety is not an individual's problem, but rather is a natural response to what society through each individual believes and how society as a collective acts. Once understood from this vantage point, it will become clear how humor can enhance mathematics learning.

Theory: That learning involves trial and error is a fundamental premise of all theories of learning. Trial and error in ordinary parlance refers to the ability to make mistakes. Learning requires mistakes; for only when an individual makes mistakes or errors does one learn what she/he does not know and consequently comes to an understanding of the subject matter. Yet this type of understanding is in conflict with society's notion of understanding. On the one hand to learn with understanding, it is necessary for the individual to make mistakes or errors, on the other hand, society as a collective views the making of errors as the "committing" of errors. To commit an error is to commit a kind of crime; the punishments are derogatory and humiliating comments such as stupid!, dumb!, or ignorant! In mathematics learning, especially remedial mathematics, where mistakes are more visible than in the humanities, the reluctance of students to make mistakes for fear of humilation is great. The conflict which generates math anxiety is the need on the one hand for the student to make mistakes and on the other hand, society's threat of humiliation for committing a mistake. Society wants the right answer without a mistake even though it believes that individual learning requires mistakes. Under such circumstances many students will refrain from making mistakes and thus will search for the right answer by rote. This of course is learning by rote instead of understanding and consequently, the students are chastized for learning in this mechanical fashion. Students are dammed if they do make mistakes and they are dammed if they do not make mistakes. From this vantage point the problem regarding mathematics learning is transformed into reducing the tension generated by the individual's needs to make mistakes and society's need to curb mistakes. Humor can reduce tension by taking the worry out of being mistaken; that is students are encouraged to make mistakes free of "charge".

Objective: The focus of this study is to examine the hypothesis that humor in the classroom enhances remedial mathematics learning by reducing math anxiety.

Purpose: It is the purpose of this exploratory study to observe, describe and develop a beginning knowledge of the use of humor in a remedial mathematics class. Specifically to describe:

1. Those situations in which humor occurs between teacher and student.
2. Student activities that are associated with a reduction of math anxiety.
3. How the classroom climate is affected by humor
4. How mistakes are encouraged

Definition of Terms:

1. Humorous interactions: Humor, in this study, is viewed in a social context as a medium of communication and, therefore, will be defined as any communication which is perceived by any of the interacting parties as humorous and leads to laughing, smiling, or feelings of amusement. This might include teasing, jocular talk, witticisms, puns, and clowning as well as joke telling. See Robinson (1977, p.200).

Methodology:

1. Basic Study Design: The basic design employed is a non-experimental descriptive survey. This approach was selected because the study necessitated observation in the original setting without control over environment factors. Bidwell (1976) advocates that observation in the natural setting should be one of the prime strategies for studying teacher-pupil influences. Indeed, many social scientists believed that be-

havior is significantly influenced by the setting in which it occurs. According to Wilson (1977) extensive research has been conducted that demonstrates the importance of the influence of the setting and the often divergent finding that result when the same phenomenon is studied in the laboratory and in the field.

2. Participant-Observation: The need for participant- observation research is predicated upon the hypothesis that human behavior is complexly influenced by the context in which it occurs and that human behavior often has more meaning than its observable "facts". See Wilson (1977). A researcher seeking to understand behavior must find ways to learn the manifest and latent meanings for the participants and must also understand the behavior from the objective outside perspective. To achieve this the researcher must develop a dynamic tension between his subjective role of participant and the role of observer so that he is neither one entirely. In studying the effects of humor on remedial mathematics learning, the researcher as teacher, participant observer, can share the daily life of the participants and can systematically work to understand their feelings, anxieties and reactions. In participant observation research the primary concern, as Magoon (1976) maintains, is not with prediction and measurement, but with description and interpretation. Support for a hypothesis rests not on a significance level, but on the clarity of description and the plausibility of the interpretation.

3. Sample: From a population of two hundred and twenty students enrolled in remedial mathematics classes from the Fall 1984 Freshman class at the Academy of Aeronautics, the participant-observer, Egon Mermelstein, was assigned to teach one morning class of fifty students and one afternoon class of thirty students.

4. Context: a. Setting - The Academy of Aeronautics, located adjacent to La Guardia Airport, is a private technical junior college devoted to preparing young men and women for careers in technical aviation, aerospace, electronics, highspeed transportation and related industries.

b. Population - Approximately fifteen hundred students, mostly male, attend the Academy of Aeronautics. Fifteen percent of these students come from foreign lands. A significant number are from the Caribbean: Jamaica, Trinidad, and Puerto Rico. Others are from Greece, Africa and the Middle East. The American Students, many of whom are from New York, are either Black, White, Hispanic or Oriental. Students are placed in either a regular junior college mathematics courses or a remedial mathematics program. Selection procedures for American is based on high school records, interview, and a mathematics survey test given by the Academy of Aeronautics. Students who have failed high school algebra or geometry or who have never takne these subjects are generally admitted to the remedial mathematics classes. Foreign students, on the other hand, are admitted to remedial math classes based on language problems, incomplete records, and a survey test.

DESCRIPTION of Subject Matter, Classroom Procedure, and learning climate:

The material covered in the remedial math classes is structural arithmetic and high school algebra. From the end of September to the end of January, students meet four times a week for a one-hour lecture session. Immediately following three of the lecture sessions, students go to the math lab, a drafting room with moveable chairs and large tables, where assignments given in the lecture session are completed. These assignments are usually given in the form of ditto sheets. A second faculty member is also present to help the students.

Some characteristics regarding the learning environment should be noted. The nearness of the Academy to the airport is a two-edged sword. On the one hand, it naturally arouses the student's interest and on the other hand, it frequently exposes students and faculty to unacceptable noise levels which are quite disruptive to the learning climate. While students in the remedial math classes move to a different room when they go to the math lab, many of these students, however, have sat in the same classroom for two or more preceding math classes. Consequently, sometimes they are restless.

Humor Presentation: Description in Lecture session and consequences in Lab.

Given the background of the students and learning environment, how is humor introduced and presented? And secondly, what effect does humor have on mathematics learning in the lecture session and performance in the lab session? A randomly ordered sequence, ordered chaos, describes the manner in which humor is introduced and presented.

Random in the sense that humor may be presented at the beginning of the lecture class, the middle, the end or any variation. Ordered in the sense that frequently, but not always, humor is directly related to subject matter, school, holidays and weekends. For example, in a discussion of literal coefficients, x, y, z, etc., the word LOVE is written on the blackboard and students are asked what these letters represent - love letters of course! Along the same vein the letter "J" is drawn on the blackboard with feet and students are asked what this represents - JAYWALKING! Holiday humor connected with Thanksgiving for example might go as follows: Why does a car never run out of gas on this holiday? Because it is Tankful! Or, after a weekend when students need a doctor to revive them, one may ask why does a proctologist work only on Saturday and Sunday---Because he works only on WEAK ENDS! Sometimes humor is centered on the airplane industry. An ANECJOKE serves well here. "I went out with a stewardess, we had a fight, and guess what she told me? TAKE OFF!"

Other times, humor is not related to any of the foregoing, but focuses on some absurd event such as what do you call it when you see a column of insects march off a cliff? INSECTICIDE! Under all these guises, humor is introduced as a change of pace, as a breather. Humor as presented in the class lecture is neither derogatory nor pornographic, although at times it may be self-deprecating.

A "funny thing" which happens prior to the math lab has consequences for the lecture session as well as the lab session. Humor which borders on the absurd, frees students to ask "stupid questions and more importantly frees them to go to the blackboard and make mistakes. The tone created in the lecture session, a casual atmosphere where mistakes are accepted even encouraged, is transformed in the math lab into a cooperative learning environment. Students spontaneously assist each other with problems. Frequently, three or four students will go to the blackboard and work out problems together. Some students, as well as my fellow faculty member and I, provide individualized tutoring. Thus, another powerful method of math learning, math teaching is fostered in an informal setting created by a climate of humor. Humor in the lecture session seems to promote further learning and an improved level of performance on quizzes given once a week in the lab section. Perhaps of greater moment though, the student's attitude toward learning in general, mathematics learning in particular, is more positive. Some of their comments to the question, "How has humor helped/hindered your math learning" at the end of the semester, are recorded in the next section.

Selected Students Responses to the Question, "How Has Humor Helped/Hindered Your Math Learning?"

"Humor has helped so much for me that I am receiving and learning more information than ever. Math has been one of my weakest subjects since 10th grade. Now it is more like one of my best."

"Humor is very important because it relieves the mind and helps you concentrate on what you are doing."

"In my opinion humor can do both. It can hinder learning if at the wrong time the teacher decides to make a joke, and an already confused pupil may be totally thrown off. On the other hand, if everybody understands the lesson, I see nothing wrong with a couple of bad jokes now and then."

"It helps most of the time. It sometimes reduces the stress while still maintaining your concentration. I have learned to survive the humor which helps me do better. My grades are up. HUMOR HELPS".

"I'll tell you the truth this is the first time I ever did so good in math. When there is a little humor in class it would relieve the tension if you were a little confused." P. S. Thanks.

"Humor has helped to establish a relaxed and informal setting in the classroom. Students feel less inhibited when asking questions. In a formal setting without humor, the student may say to himself - (I won't ask a question because I don't want the professor or fellow students to think it is a stupid question and that I am a Jerk."

"Humor in the class really helped relieve tension to help me do good in math for the first time in my life."

"When we had hard math equations and our minds were confused, a joke helped to break the tension and gave us a little break to relax. After that my concentration wasn't as puzzled as before, but I still did not know how to do the math equations."

"Humor has helped me to stay awake in class and participate in class."

"Humor in class has not hindered nor helped me in my performance in class. Mathematics has always been my favorite subject. From my point of view, this is the only class in this school I've attended where there is almost all students with perfect attendance."

"Every class you are in there always has to be one class clown. In our class it is our teacher. It is a great change from the standard, 'you are only here to learn' math class. It relaxes you and thus enables you to learn while you are relaxed and not sitting there all tense."

Conclusions:

The description of the classroom setting, in lecture and lab, as well as the student's comments would seem to support the hypothesis that humor reduces math anxiety and promotes learning. Indeed the frequent mention by students of tension reduction such that learning can take place attests to the existence of math anxiety in the classroom. Its existence lends credibility to the source of this anxiety as a conflict in which mistakes are required for learning and in which society requires that mistakes need to be curbed.

Several areas of research need to be addressed. Descriptions of humor in all natural settings in classroom situations is suggested. Does humor in one classroom affect the atmosphere in a non-humorous setting? What kind of humor is most successful in a classroom setting; elementary, junior high school, high school and college?

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MATHEMATICS FOR THE STUDENT
OF SCIENCE AND ENGINEERING

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1. Introduction

This paper is concerned with university mathematics for students of science and engineering. There seems to be a consensus about what to teach and what to be the principle of teaching. About the principle, Courant and John states in the preface of "Introduction to Calculus and Analysis":

"To lead the student directly to the heart of the subject and prepare him for active application of his knowledge. It avoids the dogmatic style which conceals the motivation and the roots of mathematics in intuitive reality. To exhibit the interaction between mathematics and its various applications and to emphasize the role of intuition remains an important aim."

About what to teach, there are some standard courses:

Linear Algebra, Calculus, Vector Analysis, Complex Analysis, Ordinary Differential Equations, Fourier Analysis and its Applications to Partial Differential Equations, Statistics, and so on.

However,to realize these courses as textbooks there are many choices of strategies, at least two extremities: textbooks of

1) large comprehensive type, which means more material is included than can be covered in a presumed period, to provide alternatives depending on the degree of maturity of the class, and the taste of the instructor.

2) compact minimal essential type, which means only minimal essential material is included and is supplemented by the taste of the instructor and by progress of the class.

In Europe and America, most textbooks are of the former type and in Japan there have been some of the latter type. This may be caused by Japanese nationality of diligence but in a short duration, or the educational circumstances in Japan. In Section 2, we shall explain the educational circumstsnces in Japan, for reference.

About ten years ago, in order to meet the needs of the times, especially variety of the student maturity due to the increse of the number of students, we have edited a series of textbooks of the latter type and still continue. In this paper, we would like to describe the editing policy, effectiveness and some problems.

2. Circumstances of mathematical education in Japan

School education in Japan starts at six years old, and 6 years at elementary school, 3 years at middle school, 3 years at high school and 4 years at university. The first 9 years are compulsory. Contents of mathematics in the high school are shown in the following Fig.1.

1st year	Mathematics I	
2nd year	Basic Analysis	Algebra & Geometry

3rd year	Calculus	Probability & Statscics

Math. I is compulsory for all students, and the others are selective. However, students for science and engineering come to universities with all credits of mathematics. By the way, curriculum of mathematics from elementary school through high school is strictly regulated by the guideline of the Ministry of Education, while the one at the university is free from any governmental control. But a remarkable coincidence of the curriculum is observed, as shown in the following Fig.2.

1st year	Linear Algebra (1)	Calculus (2)
2nd year	Complex Analysis (1)	Differential Equations (1)

Stastistics (1), Partial Differential Equations (1), Numerical Computations (1) or some other topics are selective during 2nd to 4th year.

Here, (1) means 100min.×30 weeks (one year) lecture including exercises.

On the other hand, increase of the number of students for science and engineering (about 8% of the age group) creates

1) Increase of variety of knowledge and maturity of students,

2) Decrease of basic skills and abilities in mathematics of students like those of manipulation, geometrical insight or logical reasoning,

3) Rapid decay of desire of learning mathematics after entering universities.

It is said that 3) is caused by releasing after the severe entrance examination. Actually, some students are bright and well-prepared for the university education with a mastery of high school mathematics acquired sometimes by their efforts for entrance examination, but the majority of students does not. They will support the future science and technology by their efforts. Therefore, the object of our teaching would be the majority of students. Complaints of the majority of students endorse the general principle described by Courant and John from the back side.

See, Terada and Fujita [1].

3. The Editing Policy and its Backgrounds

In general, due to

1) the rapid development of science and technology,

2) modernization of the elementary mathematics,

3) increase of the number of students for science and engineering, and

4) special circumstances in Japan, described above,

variety of mathematical backgrounds of students for science and engineering make it difficult to teach uniformly. To meet these needs of the times, we were asked to edit a new series of mathematical textbooks, about ten years ago.

As mensioned above, readers of our books are supposed to be the majority of students for science and engineering.

As the general editing policy, we have adopted the followings:

1) close connection with high school mathematics,

2) modern view-points,

3) sound presentation (constructive, if possible).

4) deep insight to the mathematical expressions sufficient to the future applications.

Titles of the textbooks are traditional because there are some standard courses, as mentioned in the Introduction. To realize these editing policy as textbooks, we compared two types of textbooks, large comprehensive and compact minimal essentian types, and some between them.

Textbooks of large comprehensive type will be the best for the diligent and able student, but will be difficult to adopt to the majority of students who are not elite.

On the other hand, textbooks which contain the minimal essential material and is supposed to be supplemented by the taste of instructor and progress of the class, will be easy to study for the aimed maturity of students. In particular, picking up chiefpoints here and there from a large book and giving the mathematically deductive reasoning are very difficult to the present averaged students.

Psychologically, it is said that the textbooks of the former type might give the student a feeling of uneasiness that there remains more to be studied, and the one of the compact type might give a feeling of accomplishment of the whole book.

After these considerations we have decided to edit the series of compact type textbooks, but then several textbooks of the same subject but of the different grades with different objectives will be needed. We restrict the total pages of each book at most 150 pages, and have already published 22 volumes up to now. (See Fig.3.)

Making a course by selecting suitable textbooks is left to the instructor. We have avoided as far as possible building long chains of logical interdependence, and have made books (or even chapters) as logically independent as possible. For the convenience of the reader and because of the varied backgrounds of students, we have not hesitated to repeat some materials written before. For example, caluculus will not necessarily completed in one year, but Taylor expansions and special functiions might be completed in Complex Analysis.

We attached much importance to applications, but practical applicatiions are left to the specialized courses proceeding in parallel. Most exercises are limited in mathematics.

Grade	light		medium		heavy
Linear Algebra	⑯		① ㉑	⑦	
Calculus	⑰		② ㉒		⑭
Applied Anal.		⑲			
Complex Anal.		③			
Diff. Eq.	⑱				
Ord. Diff.Eq.					④
Part. D.E.					⑨
Fourier Anal.		⑫			
Vector Anal.				⑤	
Statistics	⑳			⑥	
Numer. Comp.		⑮			

As selective topics, the following are published:

⑧ Group Theory
⑩ Functional Analysis
⑪ Topology
⑬ Catastrophy

The (number) denotes the order of publicaton.

The above matrix will show wether our attempts are successful or not and what to be fulfilled.

4. Some Examples of Our Treatments and Contents

Treatments and contents of light mathematics will be interesting, and some examples will be explained in this section.

⑯ Linear Algebra

In the 2nd year at the high school, ther is a course of "Algebra & Geometry" (50 min.x35 weeksx3 lessons). Its relevant topics to university mathematics are linear algebra including vector spaces of 2 or 3 dimensions and 2x2 matrices.

As a continuation, 16 Linear Algebra is treated usually in 3 dimensions, but taken into considerations of extension to higher dimensions. However, it does not enter the abstract vector spaces.

Contents are:

1) matrices (their operations)

2) fundamental row operations and simultaneous linear equations (inverse matrices)

3) determinants (cofactors, Cramer's formulae)

4) vectors and metrics (geometry in a space)

5) eigenvalues (diagonalization of matrices, orthogonal transformations, quadratic surfaces).

⑰ Calculus

In the high school, the student learns "Basic Analysis" in the 2nd year and "Calculus" in the 3rd year.

" Basic Analysis " contains:

1) simple sequences (mathematical induction)

2) functions (e^x, a^x, log x, trigonometric functions and their periods and addition theorem)

3) Variations of functions (derivatives, tangents, rates of changes)

4) integrations (indefinite integral, definite integral, area)

" Calculus " contains:

1) limits

2) differentiation ($(fg)'$, $f(g)'$, $(f^{-1})'$, $(\sin x)'$, $(e^x)'$,($\log x$)')

3) applications (2nd derivatives , velocity, acceleration)

4) integrations (integrations bu substitution and by parts in simple case)

5) applications (area, volume, length of paths, meaning of differential equation $y' = ky$).

As a continuation of these courses and as a light university course,

⑰ **Calculus** (130 pages) starts from the review of the high school mathematics, but emphasis is shifted from computational aspects to rather theoretical. It contains:

1) differentiation

2) mean-value theorem and its applications (extreme values, limit of indefinite forms, Taylor's theorem, convexity)

3) integration (improper integral)

4) applications (area, length of arc, vector-valued functions, area of surface, differential equations,

Simpson's method).

5) partial differentiation and multiple integrals (functions of 2 independent variables and surfaces, maximum and minimum, double integral).

Series is treated only as a tool for the Taylor expansion.

⑲ Applied Analysis contains :

ordinary differential equations, Fourier analysis and its applications to partial differential equations, complex analysis, and vector analysis.

These topics are treated in a manner suitable for the training of engineers. Concrete classical examples and their mathematical interpretations are emphasized.

Although the medium courses contain several new ideas, they are rather standard in the large, so we do not enter into them.

5. Problems to be resolved at the present and in the near future

1) Rapid development of science and technology requires the lifelong education of mathematics for scientists and engineers, and some efforts are required to build up its foundation. However, the educational circumstances run to the opposite side. It will be necessary to enhance the student to mathematics by good motivation and sound comprehension. For this purpose, we have to select good teaching materials and design the teaching programs. (Concerning this, we will present a method in another paper.)

2) Visualization, especially computer-generated graphics are becoming increasingly important as a tool for motivation

and giving insight to the mathematical expressions. See, Sunouchi and others [2].)

3) Development of personal computers should be taken into considerations. For example, the revolutionary textbooks like Lax and others' "Calculus with Applications and Computing" should be studied carefully. Also, learning through new media should be studied.

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INSTRUCTIONAL ANALYSIS SYSTEM APPLYING FUZZY GRAPHS

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1. Introduction

In order to design the teaching program concerning Mathematics, we have developed an analysis method of the instructional structure applying fuzzy theory.

Through a lot of case studies, we have practically improved university education from educational point of view.

For this analysis, we have to treat a large amount of test data, and we have developed the supporting system CARAT to make the data processing precisely and speedily.

In this paper, we describe the analysis method, and present a the case study in general education of university Mathematics.

2. Analysis System of Instructional Structure

We analyze the instructional structure of a subject matter according to the system diagram shown in 2.1. The steps are the following.

(1) We clarify the logical relations among instructional nodes, and construct the instructional structure graph S.

(2) We arrange the nodes in linear form from pedagogical point of view, and construct the teaching program graph P.

(3) We teach them sequentially in the classroom, and edit a test whose items suitably coresponds to the instructional nodes of the graph S. The structure of the test is called the test structure graph T.

(4) We execute the test, and analyze the connectivity between test items based on the test data, and construct the test fuzzy graph $\underset{\sim}{F}$.

(5) We analyze the global characteristics of the graph $\underset{\sim}{F}$, and construct a directed graph $\underset{\sim}{F}^*$ which approximates the graph $\underset{\sim}{F}$.

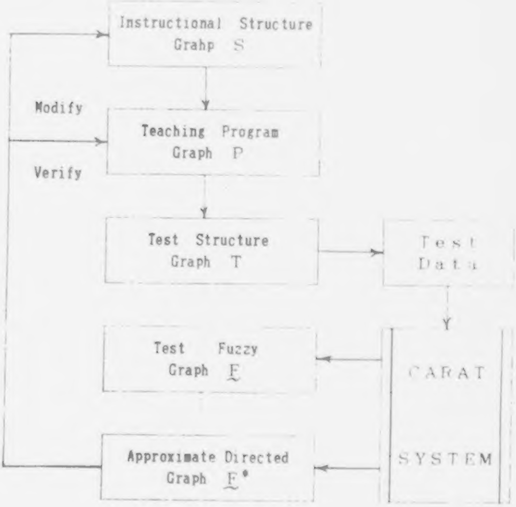
Instructional Structure
Grahp S
Modify
Teaching Program
Graph P
Verify
Test Structure
Graph T
Test
Data
Test Fuzzy
Graph F
CARAT
SYSTEM
Approximate Directed
Graph F*

Fig.2.1. System Diagram of Instructional Analysis

Concerning the methods of the construction of the graph $\underset{\sim}{F}$ and the graph $\underset{\sim}{F}^*$, we discuss in the next secssion.

It is natural that the graph S is considerd as the instructional structure of the instructor, and the graph $\underset{\sim}{F}^*$ is considered as the learning process of the students. Therefore, we could verify or modify the instructional structure by comparing and investigating the difference between the graphs S and $\underset{\sim}{F}^*$ from educational point of view.

For this analysis, we need a lot of statistical test data processing. In order to proceed the data analysis precisely and speedily, we have developed the supporting system CARAT by using the computer which has been utilized among us.

The CARAT provides us with the S-P table of the test, the test fuzzy graph $\underset{\sim}{F}$, the approximate directed graph $\underset{\sim}{F}^*$ of $\underset{\sim}{F}$ and so on. Thus we could investigate the instructional structure by comparing the graph S with the graph $\underset{\sim}{F}^*$.

3. Construction Method of the Graphs $\underset{\sim}{F}$ and $\underset{\sim}{F}^*$

We define the test fuzzy graph $\underset{\sim}{F}$ and its approximate directed graph $\underset{\sim}{F}^*$, and describe how to construct quantatively $\underset{\sim}{F}$ and $\underset{\sim}{F}^*$.

In Fig.3.1, n is the number of whole students, and $n(P_i)$ is the number of the "passers" of the problem P_i, $n(\overline{P}_i)$ is the number of the "failers", $n(P_i, P_j)$ is that of the "passers" of both P and P , and so on.

	P_j	$\overline{P}_j$	Total
P_i	$n(P_i, P_j)$	$n(P_i, \overline{P}_j)$	$n(P_i)$
$\overline{P}_i$	$n(\overline{P}_i, P_j)$	$n(\overline{P}_i, \overline{P}_j)$	$n(\overline{P}_i)$
Total	$n(P_j)$	$n(\overline{P}_j)$	n

Fig.3.1 Contengency Table

If the problem P_i is prerequisite to P_j, then $n(\overline{P}_i, P_j)$ is relatively small. Thence, both $n(\overline{P}_i, \overline{P}_j)/n(\overline{P}_i)$ and $n(P_i, P_j)/n(P_j)$ are nearly equalto 1.

Taking account of this situation, we could define an ordering index f_{ij} for the relation $P_i \rightarrow P_j$.

$$f_{ij} = \lambda n(\overline{P}_i, \overline{P}_j)/n(\overline{P}_i) + \mu n(P_i, P_j)/n(P_j) \qquad (3.1)$$

if both $n(\overline{P}_i)$ and $n(P_j)$ are not equal to 0, where λ and μ are constants with $\lambda + \mu = 1$, $\lambda > 0$, $\mu > 0$.

Theorem 3.1 $\quad 0 \leqq f_{ij} \leqq 1$ (3.2)

Concerning the instructional structure analysis, the case when either $n(\overline{P}_i, \overline{P}_j)$ or $n(P_i, P_j)$ is equal to 0 is not interesting. Therefore, we do not consider such a case.

Theorem 3.2 $\quad n(P_i) \geqq n(P_j) \rightarrow f_{ij} \geqq f_{ji}$ (3.3)

According to the theorem 3.1, we could construct the fuzzy graph $\underset{\sim}{F} = (\underset{\sim}{f}_{ij})$ by giving a fuzziness $\underset{\sim}{f}_{ij} = f_{ij}$ to the arc from one problem P_i to the other problem P_j. That $\underset{\sim}{f}_{ij}$ is nearly equal to 1 means the conectivity from P_i to P_j is strong, and that $\underset{\sim}{f}_{ij}$ is nearly equal to 0 means the one form P_i to P_j is weak.

According to the theorem 3.2, we could also understsnd that the ordering relation among the problems is natural, because there is no loop for example.

Another porpose of this secsion is to look for a directed graph, which is similar to the fuzzy graph $\underset{\sim}{F}$, but it dose not always exist. So, we construct a fuzzy graph which is similar to $\underset{\sim}{F}$ and also approximates a directed graph in a sense described below. It will be called an approximate directed graph of $\underset{\sim}{F}$.

In order to compare two fuzzy grapfs $\underset{\sim}{F} = (\underset{\sim}{f}_{ij})$ and $\underset{\sim}{G} = (\underset{\sim}{g}_{ij})$, we define the C-index (Coincidence-index, relative Hamming distance) $C(\underset{\sim}{F}, \underset{\sim}{G})$ by

$$C(\underset{\sim}{F}, \underset{\sim}{G}) = \sum_{i,j} |\underset{\sim}{f}_{ij} - \underset{\sim}{g}_{ij}| \,/\, (n^2 - n) \tag{3.4}$$

According to the definition of the C-index $C(\underset{\sim}{F}, \underset{\sim}{G})$, if it is close to 0 (for example $C(\underset{\sim}{F}, \underset{\sim}{G}) < \varepsilon$ and ε is usally assumed to be 0.2 or 0.27 by Fuzzy Theory), then we call $\underset{\sim}{F}$ and $\underset{\sim}{G}$ are similar.

Definition 3.1 The π-fuzzy graph $\underset{\sim}{F}^{\pi} = (\underset{\sim}{f}^{\pi}_{ij})$ of a fuzzy graph $\underset{\sim}{F} = (\underset{\sim}{f}_{ij})$ is defined by

$$\underset{\sim}{f}^{\pi}_{ij} = \begin{cases} 1 & : \underset{\sim}{f}_{ij} \geq 0.5 - \pi \\ 0 & : \underset{\sim}{f}_{ij} \leq 0.5 - \pi \\ \underset{\sim}{f}_{ij} & : \text{otherwise} \end{cases} \tag{3.5}$$

where π is a constant between 0 and 0.5.

Theorem 3.3 If π approaches to 0.5, then $C(\underset{\sim}{F}, \underset{\sim}{F}^{\pi})$ goes to 0.

$$\pi \uparrow 0.5 \rightarrow C(\underset{\sim}{F}, \underset{\sim}{F}^{\pi}) \downarrow 0 \tag{3.6}$$

Theorem 3.4 For any fuzzy graph $\underset{\sim}{F} = (\underset{\sim}{f}_{ij})$ and any $\varepsilon > 0$, there exists a π-fuzzy graph $\underset{\sim}{F}^{\pi} = (\underset{\sim}{f}^{\pi}_{ij})$ which is similar to $\underset{\sim}{F}$, if π is suitably chosen.

$$\forall \underset{\sim}{F},\ \forall \varepsilon > 0 \rightarrow \exists \underset{\sim}{F}^{\pi} : C(\underset{\sim}{F}, \underset{\sim}{F}^{\pi}) < \varepsilon \tag{3.7}$$

Let the 0-fuzzy graph $\underset{\sim}{F}^{0}$ be a kind of π-fuzzy graph $\underset{\sim}{F}^{\pi}$ where π is 0.

Definition 3.2 The approximate directed graph $\underset{\sim}{F}^{*}$ is defined by the closest π-fuzzy graph to $\underset{\sim}{F}^{0}$ among the π-fuzzy graphs similar to $\underset{\sim}{F}$.

$$\underset{\sim}{F}^{*} = (\underset{\sim}{f}^{p}_{ij}),\ p = \{ \pi \ ;\ \min C(\underset{\sim}{F}^{0}, \underset{\sim}{F}^{\pi}),\ C(\underset{\sim}{F}, \underset{\sim}{F}^{\pi}) < \varepsilon \} \tag{3.8}$$

Theorem 3.5 For any fuzzy graph $\underset{\sim}{F} = (\underset{\sim}{f}_{ij})$, there exists an approximate directed graph $\underset{\sim}{F}^{*} = (\underset{\sim}{f}^{p}_{ij})$.

According to the theorem 3.5, we could properly construct the approximate directed graph $\underset{\sim}{F}^{*}$ for any fuzzy graph $\underset{\sim}{F}$, and we can apply the Instructional Analysis System shown in Fig. 2.1.

4. Case Study in General Education of University Mathematics

As the general education in Japanese university, we normally teach Linear Algebra, Calculus and so on.

The contents of Linear Algebra are the n-dimensional Vector Space, Matrices, Determinants, the Eigenvalue Problem, the Quadratic Form and so on.

On the other hand, the contents of Calculus are Differentiation and Integration, Partial Differentiation, Differentioal Equation, Difference Equation and so on.

Concerning the faculty of the social science, we usually teach Mathematics once a week which is 90 minites lecture. The courses are for the first year students and the second year students, and the contents of the lectures are classified and shown in Fig.4.1.

	Linear Algebra	Calculus
1st Year	n-dimensional Vector Spsce Matrices Determinants Linear Equattion	Differentiation & Integration Partial Differentiation f(x,y)
2nd Year	Eigenvalue Problem Quadratic Form	Partial Differentiation f(X) Differential Equation Difference Equation

Fig.4.1. Contents Table

We would discuss a case study concerning the difference equation experimented with the School of Political Science and Economics in Waseda University.

$$\sum_i a_i y(x+n-i) = f(x) \qquad (4.1)$$

We could classify the difference equation (4.1) according to the following properties.

(H) Homogeneous

(I) Inhomogeneous

(R) Characteristic equation with real roots

(C) Characteristic equation with complex roots

According to the properties above, we could construct the instructional structure graph S shown in Fig.4.2 and the teaching program graph P shown in Fig.4.3 from pedagogical point of view.

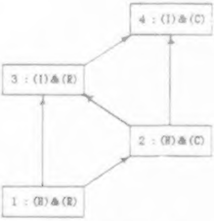

Fig.4.2 Graph S

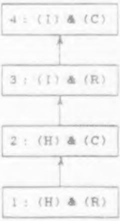

Fig.4.3 Graph P

According to the graph P, we lectured the difference equation and edited the test shown in Fig.4.4.

Solve the following Difference Equation.

(1) $y(x+2)-3y(x+1)+2y(x)=0$ (2) $y(x+2)-2y(x+1)+4y(x)=0$

(3) $y(x+2)-5y(x+1)+6y(x)=5^x$ (4) $y(x+2)-4y(x+1)+8y(x)=5^x$

Fig.4.4 Test Problems

We executed the test in the classroom. By analysing the test data, we obtained the test fuzzy graph $\underset{\sim}{F}$ and the approximate directed graph $\underset{\sim}{F}^*$ shown in Fig.4.5 by using the CARAT System.

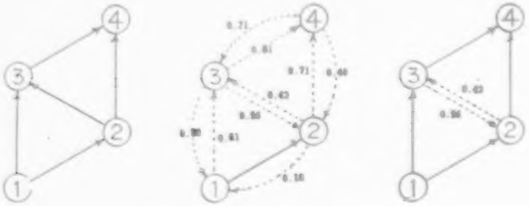

Fig.4.5 Graph T, $\underset{\sim}{F}$, F^*

By comparing the graph S (or T) with the graph F , we had following information.

(a) According to the arc 1 → 2 and 3 → 4 in both S and $\underset{\sim}{F}^*$, we could verify the flow (R)→(C).

(b) According to the arc 1 → 3 and 2 → 4 in both S and $\underset{\sim}{F}^*$, we could verify the flow (H)→(I).

(c) According to the arc 2 → 3 in S and that 2 → 3 in $\underset{\sim}{F}^*$, we could know the flow (H)&(C)→(I)&(R) is ambigious.

The information suggested us that the instructional structure and the learning process locally differed.

We analysed the causes of the difference, and recognized that the students did not know much about the complex numbers, especially with the properties of $e^{i\theta}$.

As the prerequisite of the category (I), we tentatively survey the Euler's formula, the De'Moivre's law and so on concerning the complex numbers in the next year.

As the result, we sucsessively obtain the graph $\underset{\sim}{F}^{*}$ shown in Fig.4.5. which is quite similar to the graph T.

In this way, we could effectively verify or modify the instuructional structure of the subject matter by using the CARAT System.

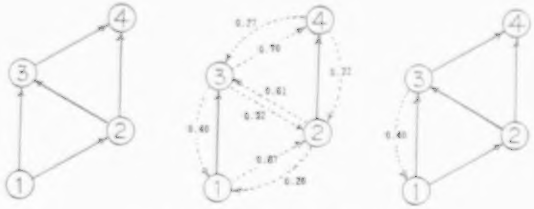

Fig.4.6 Graph T, $\underset{\sim}{F}$, F^{*}

5. Conclusion

We have presented the new analysis method of the presupposed instructional structure, the designing system of the teaching program and discussed the educational effectiveness through the case study.

Also our case study is experimented in general education of university Mathematics, the analysis method supported by the CARAT System is available for the arbitrary subject.

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APPENDIX

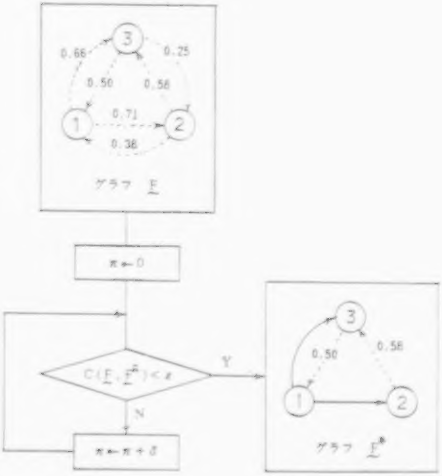
The algorithm to obtain $\underset{\sim}{F}^{*}$ of $\underset{\sim}{F}$ is as follows:

(1) Let π be 0, construct the initial $\underset{\sim}{F}^{\pi}$ and go to (2).

(2) If $C(\underset{\sim}{F}, \underset{\sim}{F}^{\pi}) < \varepsilon$, then $\underset{\sim}{F}^{*}$ is $\underset{\sim}{F}^{\pi}$, else go to (3).

(3) Increase π by δ, construct the new $\underset{\sim}{F}^{\pi}$ and go to (2).

The illustrative flow chart is shown in figure, where ← denotes the substitution in programming language. Let ε be 0.2 and δ be 0.27, for a graph $\underset{\sim}{F}$, we have $\underset{\sim}{F}^{*}$ when π is 0.08.



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